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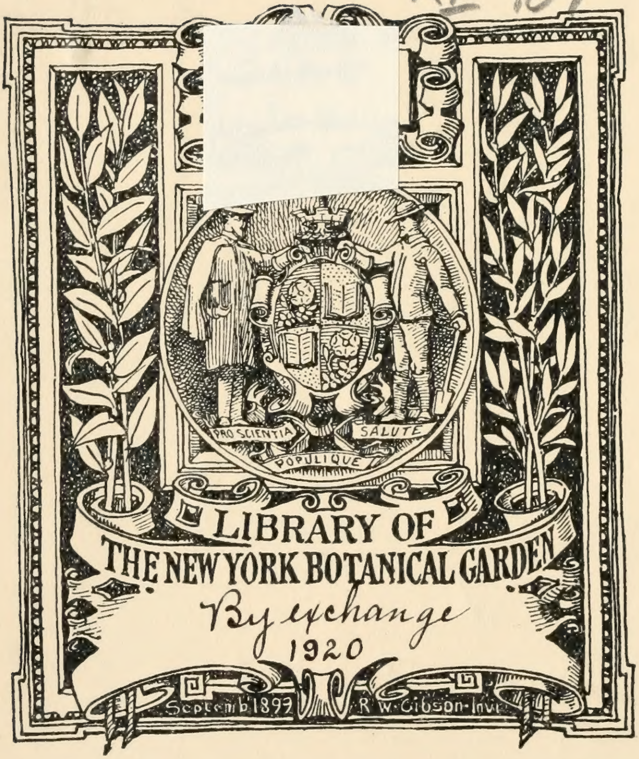
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NINETEENTH ANNUAL

IOWA YEAR BOOK OF AGRICULTURE

ISSUED BY THE

IOWA DEPARTMENT OF AGRICULTURE

1918

Published by
THE STATE OF IOWA
DES MOINES

XI
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1918

LETTER OF TRANSMITTAL

OFFICE OF IOWA STATE DEPARTMENT OF
AGRICULTURE.

Des Moines, Iowa, July 1, 1919.

To His Excellency, W. L. Harding, Governor of Iowa:

Sir: I have the honor to transmit herewith the Nineteenth Annual Iowa Year Book of Agriculture for the year 1918.

ARTHUR R. COREY,
Secretary State Board of Agriculture.

INTRODUCTORY

Volume Nineteen of the Iowa Year Book of Agriculture covering the year 1918 is presented herewith in twelve parts.

Part One is a record of the board, executive and special committee meetings of the State Board of Agriculture held during the year 1918.

Part Two is a complete report of the State Agricultural Convention. This includes the report of the secretary to the convention, reviewing the transactions of the department for the year; an itemized statement of the receipts and disbursements of the state fair and statistical data pertaining to attendance, exhibits, etc.; a report of the Stallion Registration Division; a report covering the Farmers' Institute and Short Courses, and a report of the County and District Fairs.

The Treasurer's report, President's address and other addresses and transactions of the convention, including the election of officers and directors is included in Part Two.

Part Three is a complete report of the proceedings of the eleventh annual meeting of the Iowa County and District Fair Managers' Association, containing a stenographic report of all addresses and discussions taking place during the convention.

Part Four is a complete report of the official live stock awards at the 1918 Iowa State Fair. This is supplemented by comments on the fair by the leading agricultural and live stock papers having representatives at the fair.

Part Five is a reprint of the report of the Dairy and Food Commissioner, covering the transactions of the department and statistical data on the pounds of milk and cream received by creameries and the amount of butter made and the disposition of same.

Part Six contains excerpts from the proceedings of the annual meeting of the Iowa State Dairy Association and includes the principal addresses delivered and the discussions that took place during the convention.

Part Seven contains the principal addresses and discussions that took place during the annual meeting of the Iowa Corn Belt Meat Producers' Association.

Part Eight is a reprint of the report of the State Veterinarian covering the activities of that department for the biennial period ending June 30, 1918.

Part Nine consists of the following bulletins published by the Iowa State College of Agriculture and Mechanic Arts: "The Use of Lime on Iowa Soils"; "Test Your Clover and Timothy Seed"; "Injury From White Grubs in Iowa"; "Some Common Poultry Diseases"; "Spraying Tree Fruits"; "Selecting Good Laying Hens for Egg Production"; "Soiling Crops for Milk Production" and "Canning by the Cold Pack Method."

Part Ten is a reprint of the annual report of the Iowa Weather and Crop Service Bureau. It contains a summary and monthly review of the climatology for the year; a review of the crop conditions, by months; a tabulated crop summary showing production and value of Iowa's farm crops and a tabulation giving average yields and total production of the principal farm crops by counties.

Part Eleven consists of six tables containing the farm and crop statistics by counties, collected by the township assessors and reported to the Department of Agriculture by the County Auditors. With the co-operation of the Director of the Iowa Weather and Crop Service Bureau the assessor's books were verified and numerous errors in addition, carrying amounts forward, etc., were corrected. The statistics contained in these tables are presented by the department and represent a correct tabulation of the returns made by the township assessors after all apparent errors were corrected.

Part Twelve contains a series of tables showing the average yield, total production and total value of the principal farm crops for a period of twenty-three years. For reference work there is presented crop and live stock statistics reprinted from the 1918 year book of the United States Department of Agriculture. These statistics are presented by states for the United States and by countries for the world.

STATE BOARD OF AGRICULTURE

1919

EX-OFFICIO MEMBERS

W. L. Harding, *Governor of State*	Des Moines
R. A. Pearson, *President Iowa State College*	Ames
W. B. Barney, *State Dairy Commissioner*	Des Moines
Robt. D. Wall, *State Veterinarian*	Des Moines

OFFICERS

C. E. Cameron, *President*	Alta
J. P. Mullen, *Vice President*	Fonda
A. R. Corey, *Secretary*	Des Moines
W. W. Morrow, *Treasurer*	Afton

DISTRICT MEMBERS

First District—H. O. Weaver	Wapello
Second District—E. T. Davis	Iowa City
Third District—E. M. Reeves	Waverly
Fourth District—E. J. Curtin	Decorah
Fifth District—Cyrus A. Tow	Norway
Sixth District—T. C. Legoe	What Cheer
Seventh District—C. F. Curtiss	Ames
Eighth District—Frank E. Sheldon	Mt. Ayr
Ninth District—Chas. Escher, Jr.	Botna
Tenth District—Sears McHenry	Denison
Eleventh District—H. L. Pike	Whiting

The President, Vice President, Secretary and Treasurer are elected for one year.

Terms of the Directors for even-numbered Districts expire second Wednesday in December, 1920. Terms of Directors from odd-numbered Districts expire second Wednesday in December, 1919.

STANDING COMMITTEES

Executive

C. E. Cameron
J. P. Mullen
A. R. Corey

Auditing

F. E. Sheldon
E. M. Reeves
H. L. Pike

Resolutions

E. J. Curtin
H. O. Weaver
T. C. Legoe

Powers and Duties of Board

C. E. Cameron
J. P. Mullen
A. R. Corey
E. M. Reeves
C. F. Curtiss

Adulteration of Foods, Seeds and Other Products

R. A. Pearson
C. A. Tow
W. B. Barney

Noxious Weeds, Fungus Diseases in Grains, Grasses, Etc.

E. M. Reeves
Chas. Escher, Jr.
E. T. Davis

Dairying and Dairy Products

W. B. Barney
C. F. Curtiss
Sears McHenry

Animal Husbandry

C. F. Curtiss
E. T. Davis
R. D. Wall

Legislative

C. E. Cameron
J. P. Mullen
A. R. Corey
H. O. Weaver
E. J. Curtin

Revision of Premium List

C. E. Cameron
J. P. Mullen
A. R. Corey
T. C. Legoe
C. F. Curtiss
H. L. Pike

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IOWA'S SOURCE OF WEALTH

IOWA'S SOURCE OF WEALTH FOR THE YEAR ENDING DECEMBER 31, 1918.

Compiled for the Iowa Year Book of Agriculture from Estimates Furnished by the Iowa Weather and Crop Service, Showing Acreage, Average Yield and Total Yield of Farm Products.

Crop	Acres	Average Yield	Average Price	Total Yield	Total Value
Corn	10,337,700	34.5 Bu.	$ 1.23	356,677,000	$438,712,710
Oats	5,426,500	40.1 Bu.	.64	217,592,500	140,043,200
Spring wheat	580,400	18.2 Bu.	1.99	10,584,600	21,063,354
Winter wheat	197,270	19.9 Bu.	2.02	3,920,810	7,920,036
Barley	340,100	31.3 Bu.	.89	10,649,200	9,447,788
Rye	50,040	18.1 Bu.	1.48	905,850	1,340,658
Flax Seed	8,687	10.1 Bu.	3.26	87,450	285,087
Timothy Seed	156,750	4.3 Bu.	4.27	673,025	2,873,817
Clover seed	23,480	1.5 Bu.	19.74	35,220	695,242
Potatoes	97,210	76.1 Bu.	1.32	7,394,750	9,761,070
Hay (Tame)	2,502,620	1.3 tons	19.57	3,357,100	65,697,448
Hay (Wild)	491,590	1.2 tons	16.00	594,580	9,513,280
Alfalfa	116,040	2.8 tons	23.93	329,110	7,875,602
Pasture and Grazing (Estim'd)					90,000,000
Ensilage (Estimated)					20,000,000
Sweet Corn (Estimated)		3.0 tons	15.00		6,000,000
Pop Corn (Estimated)	18,805	19.5 Bu.	4.16	366,700	1,525,472
Buckwheat (Estimated)	16.000	15.3 Bu.	1.70	244,800	416,160
Fruit Crop (Estimated)					6,000,000
Garden Truck (Estimated)					8,500,000
Sugar Beets for Manufacture					
(Estimated	7,000				
(Estimated)		10.0 tons	9.00	70,000	630,000
Miscellaneous (Estimated)					11,500,000
Total					$859,830,915

Dairy products (Estimated)	$ 100,000,000
Poultry and Eggs (Estimated)	75,000,000
Wool—4,815,000 pounds at 58c	2,792,700
Total value of farm products	$1,037,623,615

NUMBER, AVERAGE VALUE AND TOTAL VALUE OF LIVE STOCK DECEMBER 31, 1918.

Figures taken from estimates made by the United States Department of Agriculture.

	Number	Average Value	Total Value
Horses	1,567,000	$ 95.00	$ 148,865,000
Mules	68,000	113.00	7,684,000
Milch Cows	1,381,000	86.00	118,766,000
Other cattle	2,861,000	52.60	150,489,000
Swine	10,925,000	27.50	300,438,000
Sheep	1,322,000	13.70	18,111,000
Total value of live stock			$ 744,353,000
Total value all farm products and live stock			$1,781,976,615

PART I

Synopsis of Proceedings of the Iowa State Board of Agriculture and Executive and Special Committee Meetings, from December 14, 1917, to December 13, 1918.

SPECIAL COMMITTEE MEETING—WEST HOTEL, SIOUX CITY

January 3, 1918.

The committee composed of Cameron, Curtin and Corey met at the West Hotel, Sioux City, with other members from the Nebraska State Fair, South Dakota State Fair and Sioux City Interstate Fair, representatives of the Iowa, Nebraska and South Dakota racing circuit.

The purpose of the meeting was to arrange a speed program for the circuit, uniform conditions, etc. The program and conditions was agreed upon for the Iowa State Fair.

EXECUTIVE COMMITTEE MEETING.

January 16-17.

Members present, Cameron, Olson, Corey and Director Mullen. The purpose of the meeting was to take up the matter of concrete floor in the aisles of Machinery Hall as authorized by the board at the December meeting. The committee drafted the specifications for the floor; also for the sidewalk to be laid on the west side of the Agricultural Building, and directed the secretary to advertise for bids to be received on same February 6th. The specifications call for a five-inch concrete floor in the aisles of Machinery Hall and four-inch cement sidewalk. It was also the understanding that the brick that were removed from the old walk west of the Agricuultural Building were to be used in laying a walk from the street car entrance to the south entrance to Machinery Hall.

The committee approved the $100,000 bond of W. W. Morrow, treasurer.

The executive committee decided to ask the boys competing for the free trip to the state fair to write an essay on the subject, "How the Farmer Boy Can Help Win the War."

The committee authorized the secretary to trade the old typewriter used in the publicity department for a new Underwood, paying the difference amounting to $48.03.

The secretary was authorized to employ a stenographer at not to exceed $75.00 per month, for the publicity department.

MEETING STATE BOARD OF AGRICULTURE.

February 7.

Meeting was called to order at 11:00 a. m. with President Cameron in the chair.

The following members responded to roll call: Cameron, Olson, Corey, Weaver, Davis, Reeves, Curtin, Curtiss, Sheldon and Escher.

The secretary read the minutes, commencing with the meeting of the State Agricultural Convention and the Iowa Association of County and District Fair Managers held at the Savery Hotel on December 11th and concluding with the executive committee meeting on February 6th. President Cameron announced if there were no additions or corrections to the minutes they would stand approved as read. The minutes were approved.

Mr. Curtiss moved that the executive committee be authorized to add to the contract let to Potts Bros. for consructing cement walk on the Iowa State Fair grounds, a ten-foot walk on the south side of Machinery avenue, extending from Rock Island avenue to the street car entrance. Seconded by Mr. Sheldon. Motion prevailed.

The board discussed the matter of the Iowa State College exhibit at the state fair. The board members expressed the feeling that the college exhibit was not in keeping with the other exhibits at the fair and they did not feel it was a credit to the Iowa State College. Action on the matter was deferred until afternoon.

Mr. Davis moved that the board adjourn until 2:00 p. m. Motion prevailed.

AFTERNOON SESSION.

The board convened at 2:00 p. m. with the same members present as at the forenoon; also Mullen and Tow.

Mr. Curtiss offered the following resolution:

RESOLVED, That it is the sense of the State Board of Agriculture that the exhibit made at the state fair in recent years by the Iowa State College of Agriculture and Mechanic Arts do not compare favorably with the exhibits made by similar institutions at other leading state fairs, and that the Iowa State College exhibits do not creditably represent the work of this great educational institution,

THEREFORE, we respectfully request the State Board of Education to make provision for a more creditable exhibit.

Mr. Sheldon moved the resolution be adopted. Motion seconded by Curtin and unanimously adopted by the board.

The board proceeded to take up the matter of revising the premium list for the 1918 fair.

Mr. Curtiss, superintendent of the horse department, made a number of recommendations calling for the following changes in the amounts offered:

	Increase	Decrease
Stable decorations	$ 70.00	
Percherons	64.00	
Clydesdales	64.00	
Shires	54.00	
Belgians	64.00	
Belgian Futurity	100.00	
Saddle horses	100.00	
Military horses	100.00	
Hunters and jumpers		$ 45.00
Standard bred		250.00
Morgans		205.00
Hackneys		190.00
Welsh ponies		74.00
Shetland ponies	30.00	
Hackney ponies and others	65.00	
Ponies in harness (new class)	820.00	
Ponies under saddle (new class)	300.00	
Mules	200.00	
Jacks and jennets	450.00	
Stable managers' prize (new)	100.00	
	$2,601.00	$ 764.00

Net increase, $1,837.00.

Mr. Reeves moved that the changes in the classification recommended by Dean Curtiss be adopted. Seconded by Mr. Curtin. Motion prevailed.

Mr. Escher, superintendent of the sheep department, stated there were no changes to be made in the sheep classification, but that he would recommend a classification for the three leading breeds of milk goats, viz., Toggenberg, Nubian, and Saanen, calling for an appropriation of $290.00. Mr. Curtin moved the recommendations of Mr. Escher, calling for a class for milk goats, be adopted. Seconded by Mr. Davis. Motion carried.

The secretary recommended that $18.00 be added to the prizes offered for flocks in the American class and that a class for Buff Orpington ducks, calling for $3.50, be added this year. Mr. Escher moved that the recommendations of the secretary for the poultry department be adopted. Seconded by Mr. Curtin. Motion carried.

In accordance with instructions of the board at the December meeting Secretary Corey presented a classification for rabbits which had been formulated by the officers of the Interstate Pet Stock Association and himself. The classification calls for fifteen varieties of rabbits and an appropriation of $180.00 for prizes. An entry fee of fifty cents for each rabbit entered is provided for, which should take care of the prizes offered in this class. Mr. Corey recommended the adoption of the classification. Mr. Escher moved that the recommendations of the secretary for a class for rabbits be adopted. Seconded by Mr. Curtin. Motion prevailed.

Mr. Tow stated there were no changes in his department other than what had been authorized by the board at the annual meeting in December. He stated the changes authorized at that time would call for the following increases:

	Increase
Spotted Poland China	$170.00
Chester White Futurity	100.00
Chester White Boys' and Girls' Pig Club Class	50.00
O. I. C. Boys' and Girls' Pig Club Class	50.00
Poland China Boys' and Girls' Pig Club Class	50.00
Duroc Jersey Boys' and Girls' Pig Club Class	50.00
Hampshire Boys' and Girls' Pig Club Class	50.00
Total	$520.00

Mr. Sheldon, superintendent, made the following recommendations for the agricultural department:

Increase the prizes on sheaf grain	$11.00
Potatoes	54.00
Field or stock vegetables	6.00
Decrease prizes on table vegetables	6.00

leaving a net increase for the department of $65.00. Mr. Sheldon also made recommendations for changes in the pantry and kitchen department, calling for the following additions to the classification:

	Increase	Decrease
War breads, cakes and cookies (new)	$142.00	
Wheat bread		$33.00
Cake (third prize of $1.00)	17.00	
Butters (additional varieties)	21.00	
Pickles, etc. (additional varieties)	9.00	
Canned fruits, etc. (additional varieties)	12.00	
Canned vegetables (new)	30.00	
Dried vegetables (new)	20.00	
Canned meat (new)	15.00	
	$266.50	$33.00

Net increase, $233.50.

Mr. Curtin moved the recommendations made by Mr. Sheldon for the agricultural and pantry and kitchen department be adopted by the board. Seconded by Mr. Mullen. Motion prevailed.

Mr. Reeves, superintendent of the horticultural department, recommended that a new class for a 25-plate display of apples be added for northern, central, capital and southern districts. This would call for an addition of $116.00 to the premium list for the horticultural department. Mr. Davis moved the recommendations of Mr. Reeves be adopted. Seconded by Mr. Weaver. Motion carried.

Secretary Corey presented the recommendations of Mr. Wesley Greene, superintendent of the floricultural department. The revision calls for a number of changes in the classification and for an increase of $53.00 in the amount of premiums offered. Mr. Curtiss moved the recommendations of Mr. Greene as presented by the secretary be adopted. Seconded by Mr. Escher. Motion carried.

In the absence of Mr. Legoe, superintendent of the textile department, Mr. Corey presented the recommendations for a number of changes in the classification consisting of garments made from castoffs, darning, patching, knitting, etc. The war-time classification calls for $81.00 in prizes. Mr. Weaver moved that the recommendations of the superintendent and secretary be adopted. Seconded by Mr. Curtin. Motion carried.

The secretary stated he had no recommendations for changes in the classifications in the dairy department, nor the graphic and plastic art and baby health departments, nor the spelling contest. Mr. Mullen moved inasmuch as there were no changes to be made in those departments, that they be continued on the same basis as last year. Seconded by Mr. Reeves. Motion prevailed.

Mr. Mullen, superintendent of the machinery department, discussed the advisability of purchasing the Shaver Carriage Company building, or ordering it removed from the fair grounds. Mr. Curtiss moved that the matter of purchasing the Shaver Carriage building or having it removed from the grounds be left with the executive committee and the superintendent of the machinery department with power to act. Seconded by Sheldon. Motion carried.

Mr. Sheldon mentioned to the board that the cases in the balcony of the agricultural building, in which pantry stores, canned goods, etc., are stored, are unsatisfactory and that they afforded neither a suitable place for displaying the goods nor a safe place to keep the exhibits. Mr. Sheldon stated he was of the opinion that suitable cases might be provided at a very nominal expense if the glass from the old cases was used. He also recommended that all display cases be provided with locks and keys. Mr. Curtiss moved the matter of providing new display cases for the pantry store department be referred to Mr. Sheldon and the executive committee with power to act. Seconded by Mr. Reeves. Motion prevailed.

Mr. Curtiss indicated to the board that the show ring in the center field of the race track was not entirely satisfactory for showing horses in the forenoon on account of its distance from the horse barns. This and the matter of providing some sort of attraction between the Administration Building and the horse barns was discussed; also the matter of a better system of lighting in the park south of the Administration Building and on the west side of Rock Island avenue. This discussion brought out the advisability of locating a horse show ring in Block "I" of the concession grounds. Mr. Reeves moved that the matter be left to the executive committee and Dean Curtiss with power to act. Seconded and carried.

The matter of co-operating with the officers and men stationed at Camp Dodge during the fair was discussed by the board. It was the consensus of opinion that the board should co-operate with them in every possible way. It was the opinion of the board that all officers and men should be admitted to the grounds without charge. However, some method of handling the men should be provided. The plan of having a certain number present each day was thought to be the best solution of the problem. It was also suggested that the company bands, and if possible the massed band, be invited to play concerts on the grounds during the fair. Mr. Weaver moved that the matter of securing the bands from Camp

Dodge and arranging for the officers and men to attend the fair be left with the executive committee with power to act. Seconded by Mr. Reeves. Motion carried.

Dean Curtiss presented a proposition for putting on a show of home-cured hams and bacons. He indicated this was a matter that was being encouraged by a number of the state agricultural departments at this time for the purpose of encouraging farmers to cure their own meat. On account of the warm weather during the state fair it was not deemed advisable to put this show on at the state fair, but that the show be staged during the short course at Ames. Mr. Weaver moved that $150.00 be appropriated for a premium list for the Iowa Farmers' Ham and Bacon Show to be staged at the short course at Ames during the winter of 1919. Seconded by Mr. Escher. Motion prevailed.

The matter of minor improvements, such as replacing outside fence on west and north side of grounds, converting four large toilets in camp grounds into sanitary toilets, excavating space under lobby of Administration Building for ladies' and gents' toilets and sleeping quarters in sheep barn for shepherds, exit at Grand avenue and a better lighting system south of the Administration Building, was discussed by the board. Mr. Curtiss moved that all such minor improvements be referred to the executive committee with power to act. Motion seconded by Mr. Curtin. Carried.

Mr. Escher moved the board adjourn to meet Friday morning at 10:00 o'clock.

FRIDAY MORNING.

The board convened at 10:30 a. m. and the following members answered to roll call: Cameron, Olson, Weaver, Davis, Reeves, Curtin, Tow, Curtiss, Sheldon, Escher, Mullen and Pike.

Mr. Pike presented the revision of the cattle department and stated on account of the additional money offered by the Shorthorn, Angus and Red Polled associations, and on account of the understanding we have had with these breeding associations that we would give $2.00 for each $1.00 they would offer, it would be necessary to add considerable to the cattle classification this year. Mr. Pike also stated that our classification for dairy cattle was far below the average offered for dairy cattle at other state fairs. Therefore, he would recommend an increase of $145.00 for at least four of the dairy breeds. The changes in the classification call for the following additional money:

	Increase	Decrease
Shorthorns	$ 500.00	
Herefords	300.00	
Angus	500.00	
Polled Durham	121.00	
Red Polled	100.00	
Holstein	145.00	
Jersey	145.00	
Guernsey	145.00	
Ayrshire	145.00	
Boys' Calf Feeding Contest	100.00	
Fat Galloway (eliminate class)		$260.00
Total	$2,201.00	$260.00

Net increase, $1,941.00.

Mr. Mullen informed the board that following the board meeting of the previous evening he called upon Mr. W. T. Shaver of the Shaver Carriage Company and took up the matter of purchasing or requiring the Shaver Carriage Company Building to be removed from the grounds. After considerable talking with Mr. Shaver Mr. Mullen agreed to make the following recommendation to the board, which was acceptable to Mr. Shaver. Mr. Mullen recommended that the building be purchased for the sum of $2,750.00. Mr. Curtiss moved that the recommendation of Mr. Mullen be adopted. Seconded by Mr. Curtin. Motion carried.

The matter of lowering Power Hall and putting in cement floor was discussed by the superintendent of the machinery department and members of the board. Mr. Mullen stated that at the present time the floor was unsatisfactory, for it would not carry heavy gas engines, and the fact that heavy gas engines were allowed to operate upon the present floor caused the entire building to tremble and that interferes with other exhibits. Mr. Curtiss recommended that the matter of changing the floor in Power Hall be left with the executive committee and the superintendent of machinery department with power to act. Seconded and carried.

Mr. Reeves moved that the contract let by the executive committee on February 6th for laying cement walks and for placing concrete floor in the aisles of Machinery Hall be approved by the board. Seconded by Mr. Sheldon. Motion prevailed.

The secretary presented the following statement showing cost of advertising the 1917 fair and recommendations for the advertising budget for the 1918 fair:

Advertising:

ADVERTISING BUDGET FOR 1918 FAIR.

	Cost of 1917 Advertising	Appropriation for 1918
Country weekly papers	$ 3,745.05	$ 4,000.00
Plate matter for country papers	1,026.25	1,000.00
Daily papers outside Des Moines	388.30	500.00
Des Moines daily papers	3,578.15	3,600.00
Agricultural, live stock and breed papers	1,475.14	1,500.00
Horse papers, adv. speed program	633.63	650.00
Miscellaneous papers and magazines	106.50	100.00
Implement and machinery papers	142.00	150.00
Supt. Advertising, salary 4 months	625.00	750.00
Stenographer and clerk, salary 5 months	450.00	375.00
Printing "Greater Iowa"	778.57	750.00
Postage on "Greater Iowa"	45.12	50.00
Drayage on "Greater Iowa"	16.00	20.00
Hangers and Window cards	1,027.98	1,000.00
Billboard service	787.14	750.00
Billboard paper and dates	102.26	250.00
Distributing advertising matter	31.50	
Cuts and electros	156.15	150.00
Letter inserts	140.00	

Membership Cooperative Pub. Bureau	200.00	
Advertising caps	40.00	
Advertising in Western Breeders' sale catalog.	25.00	
Newspaper clipping service	36.00	48.00
Newspaper advertising contracts	8.85	
Miscellaneous items	153.25	357.00
Total	$15,717.84	$16,000.00

Mr. Pike moved that the budget of $16,000 as recommended by the secretary for advertising the 1918 fair be approved. Seconded by Mr. Curtis. Motion carried.

THE FOLLOWING IS A SUMMARY OF APPROPRIATIONS MADE FOR THE 1918 PREMIUM LIST.

	1917	1918	Increase
Horses	$15,788.00	$17,625.00	$1,837.00
Cattle	14,736.00	16,677.00	1,941.00
Swine	5.072.00	5,592.00	520.00
Sheep and Goats	4,242.00	4,514.00	272.00
Agricultural	7,522.00	7,587.00	65.00
Poultry and Pet Stock	2,349.00	2,538.00	189.50
Pantry-Kitchen	735.50	969.00	233.50
Honey and Bees	497.00	497.00	....
Dairy	697.00	697.00	....
Horticulture	2,407,50	2,520.50	113.00
Floriculture	1,641.00	1,694.00	53.00
Textile and China	1,341.50	1,422.50	81.00
Graphic and Plastic Arts	662.00	662.00	....
Educational	1,454.00	1,545.00	91.00
Baby Health	300.00	300.00	....
Boys' Judging Contest	600.00	800.00	200.00
State Spelling Contest	100.00	100.00	....
Speed	18,150.00	18,450.00	300.00
Total	$78,794.00	$84,690.50	$5,896.00

President Cameron appointed as committee on per diem and mileage, Messrs. Pike, Reeves and Curtin.

The board discussed at length the manner of conducting the club dining hall and how the service could be improved and whether it would be advisable to add more room to that part of the dining hall used by the families of members and assistants. Mr. Curtiss moved that the executive committee be authorized to enlarge the room and to make any other changes they deemed advisable in order to improve the service and facilitate handling the patrons of the dining hall to better advantage. Motion seconded and carried.

The committee on per diem and mileage made the following report.

February 8, 1918.

Mr. President: Your committee on Per Diem and Mileage beg to report as follows:

	Name.	Days.	Rate.	Amount.	Miles.	Amount.	Total
14912	C. E. Cameron	5	$4.00	$20.00	140	$14.00	$34.00
14913	O. A. Olson	5	4.00	20.00	155	15.50	35.50
14914	H. O. Weaver	4	4.00	16.00	169	16.00	32.90
14915	E. T. Davis	4	4.00	16.00	121	12.10	28.10
14916	Elmer Reeves	4	4.00	16.00	126	12.60	28.60
14917	E. J. Curtin	4	4.00	16.00	195	19.50	35.50
14918	Cyrus A. Tow	4	4.00	16.00	112	11.20	27.20
	T. C. Legoe						
14919	Chas. F. Curtiss	4	4.00	16.00	37	3.70	19.70
14920	F. E. Sheldon	4	4.00	16.00	123	12.30	28.30
14921	Chas. Escher, Jr.	4	4.00	16.00	100	10.00	26.00
14922	Jno. P. Mullen	4	4.00	16.00	117	11.70	27.70
14923	H. L. Pike	3	4.00	12.00	206	20.60	32.60
							$356.10

Respectfully submitted,

H. L. PIKE,
E. M. REEVES,
E. J. CURTIN.

Mr. Pike moved the report of the committee be adopted and the secretary be authorized to issue warrants for the respective amounts. Seconded by Weaver. Motion prevailed.

Mr. Escher moved the board adjourn to meet at the call of the president. Seconded by Davis and carried.

EXECUTIVE COMMITTEE MEETING.

February 6, 1918.

Members present Cameron, Olson and Corey.

The committee proceeded to open bids for constructing four (4) inch cement walks and for five (5) inch concrete flooring in the aisles of Machinery Hall.

The following bids were received in accordance with the specifications prepared by the committee and proposal asked for and advertised in the four Des Moines daily papers:

Name.	Floor, per sq. foot.	Walk, per sq. foot.
J. R. Potts, Des Moines	$ .14	$ .13
A. A. Alexander, Des Moines	.15.95	.13.9
Potts Bros., Des Moines	.13½	.12
A. Lindblom, Des Moines	.13½	.15½
Anderson & Empire, Marshalltown	.16½	.14
Akin & Flutter, Des Moines	.13½	.12¾
Arthur H. Neumann Co., Des Moines	.11¾	.17.8
John P. Hansman, Des Moines	.14¾	.14½
Tony Amodeo, Des Moines	.20½	.25

The committee accepted the bid of twelve (12c) cents per square foot for four (4) inch cement sidewalk submitted by Potts Brothers, Des Moines, Iowa; also the bid of eleven and three-fourths (11¾) per square foot for five (5) inch concrete flooring in the aisles of Machinery Hall submitted by Arthur H. Neuman Company, Des Moines, Iowa.

The secretary was authorized to execute the contracts.

SPECIAL COMMITTEE MEETING—AUDITORIUM HOTEL.

February 18-22, Inclusive.

As per previous arrangement the Executive Committee and Director Curtin met at the Auditorium Hotel, Chicago, with a number of other fair managers for the purpose of attending a meeting of the International Motor Contest Association on February 18th, the Great Western Circuit meeting and a meeting of the American Trotting Association on February 19th. Also a meeting of the American Association of Fairs and Expositions for the purpose of considering propositions for music and attractions on February 20th to 22nd inclusive.

The Iowa State Fair was again made a member of the Great Western Circuit. The assessment of each member was fixed at $150.00; $100.00 to be used in advertising the Great Western Circuit and $50.00 for general publicity of the light harness horses and racing game.

The Executive Committee closed contract with Louis Gertson, aviator, to make two flights daily at the Iowa State Fair, one in the afternoon and one at night, commencing August 24th and closing August 30th, for the sum of $2750.00.

The committee also closed contract for Thaviu's Band to consist of fifty-one people; thirty-five musicians, including the director, four vocal soloists and twelve ballet dancers.

The committee also closed contract with the Thearle-Duffield Fireworks Company for spectacular production known as the "World's War." The production to include six free acts to be used both afternoon and evening, for the sum of $8000.00.

The committee also closed contract for the C. A. Wortham No. 1 Shows to consist of approximately twelve shows and four rides. Our percentage to be 30% of the gross receipts.

The committee also closed contract with F. M. Barnes, Incorporated, for seven free acts and the Chicago Grand Opera Quartette for the sum of $5000.00. Berber Caravan Troupe; Tally Ho Girls; Uyeno Japanese Troupe; Ebenezer; Topsy Turvey Riders; Larned and Kaufman; Helene Trio, and Chicago Grand Opera Quartette.

The committee also received propositions from J. Alex Sloan, Ralph Hankinson and Friedman Brothers, automobile race promoters, to guarantee the appearance of certain cars and drivers at the Iowa State Fair.

EXECUTIVE COMMITTEE MEETING.

March 13-14, 1918.

Members present Cameron, Olson, Corey and Director Curtin.

The committee discussed at length the feasibility of arranging the auto racing program for Friday and Saturday, August 23rd and 24th with horse racing during the balance of the fair instead of auto races on the first Friday and last Friday. After going over the matter thoroughly the committee decided it would be better to open and close the fair with auto races the same as we did in 1917. With this arrangment in view, Mr. Curtin, superintendent of the Speed Department, was authorized to add three running races to the Saturday program and feature running races for that day.

Mr. Curtin and the committee also arranged the daily program for the speed events.

The committee approved the contract with Louis Gertson and agreed to pay not to exceed $30.00 toward expense of lighting up aviation field at night.

The committee also approved contract with the firm of F. M. Barnes, Inc,. for free acts. Amount of money called for in the contract being $5000.00.

The committee also approved contract for the C. A. Wortham Shows and for Thaviu and His Band.

The committee had a conference with Thos. H. MacDonald, chief engineer, Highway Commission, and the Board of Control, relative to improving the roads within the state fair grounds, under section 1532, Supplement to the Code.

The committee decided boys and girls entering pigs in the pig contest should not be required to purchase exhibitor's tickets but that they should be required to pay the regular pen rent.

The secretary presented a proposition from Walter W. Robb, Salem, Ohio, for balloon ascensions during the period of the Iowa State Fair, the program to vary each day with the understanding that two aeronauts be used and that from one to twelve parachutes be used, for the sum of $400.

The secretary was directed by the committee to write Mr. V. G. Warner, Bloomfield, Iowa, asking him to serve as superintendent of the poultry department during the year 1918.

The secretary was authorized to negotiate for a five year lease of the twelve or fifteen acres of land north of the race track.

The following bids were received for printing 12,000 copies of our 1918 premium list.

American Lithographing Company	$1,106.00
Homestead Printing Company	1,042.80

The bid of the Homestead Printing Company was accepted by the committee.

The executive Committee also had a conference with Mr. Ralph Bolton relative to the use of fair grounds for putting on a military tournament some time during the month of June. On account of General Plummer being transferred to Ft. Sill, Okla., it was not possible to make definite arrangements regarding the tournament. The following informal arrangement, however, was discussed: The State Board of Agriculture will grant the troops stationed at Camp Dodge free use of the fair grounds, including race track, grandstand and such other buildings as are necessary to house the troops for the purpose of putting on a military tournament, with the understanding that the management of the state fair will be reimbursed for all expense for labor for putting grounds and buildings in shape and for cleaning up the grounds and restoring the buildings to their former condition after the tournament; also that they will pay for all material used and all damage to buildings, equipment, etc.; also pay for water and light used. Mr. Bolton, representative of the Greater Des Moines Committee, stated that they would underwrite the proposition and guarantee that the grounds and buildings will be turned back in as good state of repair as when taken over, and all expense the board is put to will be paid promptly.

Dr. Geo. M. Chappel, Director of the Iowa Weather and Crop Service Bureau filed his resignation with the committee. Following is his letter of notification:

Des Moines, March 14, 1918.

Hon. C. E. Cameron,
President Iowa State Board of Agriculture,
Des Moines, Iowa.

Sir: I have the honor to inform you that I have this day forwarded to his excellency, Hon. W. L. Harding, Governor of Iowa, my resignation as Director of the Iowa Weather and Crop Service, to take effect at the end of March 31, 1918.

Thanking you and, through you, the officers and members of the State Board of Agriculture, for the many courtesies shown me during my twenty-eight years of service in the Iowa Weather and Crop Service, and wishing you all success for the future, I remain,

Very truly yours,
DR. GEO. M. CHAPPEL,
Director

The commttee recommended to Governor W. L. Harding, that he appoint Charles D. Reed to fill the vacancy, also for the term of two years, commencing July 1, 1918.

The superintendent of grounds was authorized to purchase a low wheeled wagon for not to exceed $55.00.

MEETING OF EXECUTIVE COMMITTEE.

April 11-12.

Members present Cameron, Olson and Corey.

The committee met with Mr. J. Alex Sloan, Chicago, and Mr. R. A. Hankinson, Kansas City, who represent a number of the prominent dirt track auto race drivers. The committee closed contract with J. Alex Sloan to furnish six high class dirt track racing cars and professional drivers to participate in two day's racing, Friday, August 23rd and Friday, August 30th. The bonus and prize money to be paid Mr. Sloan and his drivers to be $3000.

The committee also closed contract with Mr. Hankinson to furnish six high class dirt track racing cars, six professional drivers, two large exhibition cars and two baby racing cars to participate in the races on Friday, August 23rd and Friday, August 30th; also Hankinson's original auto polo team for the period of the fair, August 23-30 inclusive. The compensation for the polo team and prizes and bonuses for the cars and drivers participating in two days auto racing to be $3500.00.

PROGRAM FOR W. & C. BLDG.

The secretary presented the communication of Mrs. W. H. Snider, chairman of the program committee of the Women and Children's Building. The committee approved the expenditure of $200.00 recommended by the program committee for putting on the "Festival of Wild Flowers of Iowa" in the W. & C. Building during the period of the fair.

The committee received the following propositions for 25 piece bands to play the engagement at the Iowa State Fair, August 23-29 inclusive:

Fischers' Burlington Band	$1100.00
Ft. Dodge Military Band	1075.00
Reed's Military Band, Sioux City	1125.00
First Cavalry Band, Ottumwa	887.50

The committee awarded contract to Fischers' Burlington Band as per the above proposition.

The committee called on Mr. Emil Schmidt, President of the Des Moines City Railway Company, and Mr. Schmidt assured the committee he would relay the street car tracks from 30th and Walnut to 30th and Grand so that that portion of 30th street might be paved.

The secretary was authorized to pay the city assessment for curbing on 30th street, amounting to $421.97.

The secretary also presented to the committee communications from the secretaries of the Minnesota and Wisconsin State Fairs, Mr. Pike superintendent of the cattle department, the American Jersey Cattle Club, and a number of dairy cattle exhibitors, relative to adopting a rule requiring a tuberculin test of all dairy cattle shown at the Iowa State Fair this year. Upon these recommendations the committee formulated the following rule and directed the secretary to insert same in the premium list this year:

"All dairy cattle exhibited at the 1918 Iowa State Fair must be accompanied by a certificate, issued or endorsed by the authorities of the state from which animals originate, that such animals are either from accredited herds, or that the same have been tuberculin tested within one year of date of exhibition.

This rule will be enforced by the Iowa Animal Health Commission which has an office on the fair grounds."

The committee authorized the superintendent of grounds to pay common laborers $3.00 per day for nine hours; also pay $6.00 a day for man and team.

EXECUTIVE COMMITTEE MEETING.

April 21-22.

Members present Cameron, Olson and Corey.

The purpose of the meeting was to decide on a number of improvements and needed repairs at the State Fair Grounds.

The committee, in company with the Superintendent of Grounds, Mr. J. H. Deemer, determined on the following improvements and repairs.

Decided as to location of walk north of the Agricultural Building; also authorized construction of walk from point near water hydrant north of Agricultural Building to connect with the walk northeast of the Women and Children's Building.

The committe also authorized the construction of ten foot walk leading from the walk along the east side of the Women and Children's Building to the south entrance to the Exposition Building with an incline to take place of the present steps.

Repair and take out step in walk down to crossing northwest of Administration Building near the street crossing to Grandstand.

Building cinder walk south side of Grand Avenue in front of newspaper building.

Build brick sidewalk from street car entrance to south entrance to Machinery Hall.

Build brick sidewalk in front of feed barn and horse barns on south side of Machinery Avenue to connect with new cement walk laid this year.

Change curb and gutter southeast of Agricultural Building to fit new walk; also curb and gutter at the north end of Agricultural Building to fit new walk.

Build a cement platform in front of concessionaires store room in east end of amphitheater, properly drained to take care of slop from ice cream packers, etc.

Through the Polk County Board of Supervisors one of the large grading outfits with street scarifier was secured for placing Grand and Rock Island Avenues to grade. The arrangement made was that this department is to pay for men for operating the outfit, kerosene, lubricating oils and for necessary repairs to teeth and blades of grader.

The committee authorized the superintendent of grounds to make arrangements to use the outfit for grading north and south roads into the camp grounds.

The superintendent was instructed to paint and repair roof on swine pavilion.

The superintendent was directed to devise some plan for converting the three frame toilets, one east of brick dining halls, one east of Exposition Building and one in orchard in camp grounds, into semi-sanitary toilets, by building cement troughs under the toilets and by installing automatic flushers.

Move barn secured from game farm to a point over sewer in camp grounds occupied by soldiers last year and convert same into toilet for men and women.

Excavate entire space under lobby of Administration Building.

The secretary was directed to have the architect prepare plans for toilets to be installed in the room excavated under lobby of Administration Building and to receive bids about May 23rd for the plumbing work. The brick work, carpenter work and excavating to be done by the superintendent of grounds.

The committee authorized the superintendent to move the outside fence east of the swine pavilion thirty-three feet further east for the purpose of enclosing all the land owned by the state at that point.

The committe authorized the superintendent to move the uostide fence the game farm and determined on location of fences at these points.

The committee instructed the superintendent if possible to repair the outside fence on Thirtieth street and on the north side of grounds.

The secretary was authorized to have sketches prepared for the change in the sheep barn to provide sleeping quarters for the shepherds. The work to be done under the supervision of the superintendent of grounds.

The superintendent was directed to wreck the Horn of Plenty.

The superintendent was also directed to use the 5 eight cornered show cases in the balcony of the Agricultral Building in constructing suitable show cases for showing pantry stores, canned goods, etc.

The committee authorized the secretary to pay Mr. E. C. Hinshaw, Fish and Game Warden $200.00 for the frame barn he built on the Fish and Game farm, providing the fence enclosing the game farm is not removed.

EXECUTIVE COMMITTEE MEETING.

May 22-23-24.

Members present Cameron and Corey.

The committee met for the purpose of opening bids on the plumbing in the basement of the Administration Building and to transact such other business as might be brought before them.

The following bids were received on the plumbing in the basement of the Administration Building, using the following fixtures.

	Crane.	Mott.	Clow.	Standard.
Van Dyck Heating & Plumbing Co..	$1,798.00	$1,483.00	$1,475.00	....
Century Heating & Plumbing Co....	2,058.85	1,696.76	....	2,145.39
Bailey Plumbing Co.	2,285.00	....	....	2,350.00
Des Moines Plumbing & Heating Co.	1,922.00	1,603.00	....	1,981.00
Parnell Sims Co.	....	1,890.00	....	....

The Van Dyck Plumbing & Heating Company, being the low bidder, were awarded the contract for Mott fixtures at $1483.00, and their proposition to substitute six inch soil pipe in place of four inch for the sum of $145.00, was accepted by the committee.

The proposition from P. J. A. Smith, Director General of British War Exhibits, New York City, was gone over thoroughly by the Executive Committee and it was agreed that we accept the exhibit as per proposition submitted and that the same be staged in the building formerly known as the Shaver Carriage Company Building.

The proposition from L. Lamson Scribner, Expert on Exhibits, was considered by the committee and they agreed to accept the U. S. exhibit from the Department of Agriculture, War, Navy, Interior, Commerce and Food Administration as per proposition submitted. The proposition provides the fairs in the circuit receiving the exhibit shall pay transportation of exhibit which is to be shipped in baggage cars moving on passenger trains, at not to exceed thirty cents per mile for each car; also to provide the necessary help for unloading, setting up, packing and reloading exhibit.

The committee also approved the plan suggested by Mr. Sponsler that the expense for transportation on the exhibit from time it leaves Washington until it returns, and expense of four men in uniform and motion picture operator, be divided among the fairs to receive the exhibit.

The secretary informed the committee that bids were being asked for the Western Breeder's Futurity No. 5. The futurity is now worth $840.00, divided $578.51 for trotters and $269.41 for pacers. The trotting division has nine entries paid up and the pacing division five. The secretary was instructed to submit bid for $250.00 for the trotting division and $100.00 for the pacing division.

The communication from Mrs. W. H. Snider, chairman of the Program Committee of the Women and Children's Building was brought to the attention of the committee. The plan for carrying out an exhibit in the Auditorium of the W. & C. Building, to be known as Conservation and Buying or a Style Review covering clothing for girls from six to ten years old, high school girls, college girls, business women, clothing for homemaker in garden, kitchen, living room and on the street was approved and authority was given Mrs. Snider to pay the traveling and living expense of Miss Dodson of the clothing department and the lady who is to do the lecturing in connection with the exhibits.

The committee also agreed to equip the kitchen and dining room in the Baby Health Contest Department, which is used as a private dining room for all the ladies connected with the building.

The secretary was authorized to purchase five tons of granulated calcium chloride at $28.00 per ton plus $9.60 per ton, freight from Detriot to Des Moines, to be used in laying dust on race track during auto races.

The proposition submitted by Professor Berry and Professor Ferrin relative to bringing thirty or forty stock judging teams of five boys each to the Iowa State Fair for the purpose of selecting the team to compete at the Interstate Fair at Sioux City, and the International Live Stock Show, Chicago, this fall, was brought to the attention of the committee. The committee appropriated $200.00 to be offered as prizes in this contest, providing Professor Berry secured $300.00 in contributions, a sufficient amount to pay expense of the winning team to Sioux City and the International.

The proposition for putting on a county agent camp during the period of the Iowa State Fair was discussed by the committee It was agreed if the county agent leader, Mr. Coverdale, would endorse this camp and direct the agents to attend that the fair management would grant free admissions to the county agents, provide an assembly tent for conferences and to give the county agents a good location in the camp grounds.

The secretary was directed to receive propositions and let contract for puttying, sanding and painting columns on the porch of the W. & C. Building.

The secretary was also authorized to purchase six electroliers at $26.00 each and have same placed around triangle east of Administration Building.

The request of J. U. Walker, Swan, Iowa, and several others, to put down cement platforms for their tents in the camp grounds was granted.

The secretary was authorized to purchase approximately 16,000 gallons of road oil containing not less than 50% asphalt at 7.625, with 1% discount in thirty days, and to have same laid on the streets of the fair grounds by the Hawkeye Road Oiling Company at three-fourths cent per gallon, we to furnish teams for hauling road oiler.

Lease was entered into for the ground north of the race track for an aviation field, the rental to be $6.00 per acre.

Potts Brothers, Des Moines, Iowa, were given contract for placing 6x18 curb at the Grand Avenue and Walnut Street entrances.

The committee also met with Mr. James Horrabin, Des Moines, Iowa, and discussed the proposition of paving Grand Avenue and Walnut street entrances with bitulithic paving, the same as he is to lay on East 30th street near the fair grounds. Mr. Horrabin agreed to lay this paving at $3.00 per yard. The committee deemed this price too high and authorized the secretary to secure the cooperation of the Highway Commission, get out plans and specifications for seven inch reinforced concrete paving and to receive bids on same at an early date.

Potts Brothers were given contract for laying sidewalks from the street intersection north of the Agricultural Building to the walk already in place east of the W. & C. Building; also a walk from the walk in place east of the W. & C. Building to the south entrance of the Exposition Building, at 12c per square foot.

EXECUTIVE COMMITTEE MEETING.

June 14-15.

Members present Cameron and Corey and director Mullen.

The committee received the following bids for paving Grand Avenue and Walnut Street entrances with seven inch reinforced concrete paving. Reinforcing to be furnished by owner.

	Paving. and grading.	Paving without grading.	Grading per cubic yard.
James Horrabin Company	$2.64 sy. yd.	$2.54 sq. yd.	$ .75
Arthur Neumann Company	2.56 sq. yd.	2.37 sq. yd.	.96
Potts Bros.	2.38 sq. yd.	2.25 sq. yd.	.65
Geo. E. Whitney	....	....	.80
Willis Wright	....	....	.64

The bid submitted by Potts Brothers, Des Moines, for $2.38 per square yard for laying paving and 65c per cubic yard for grading was accepted by the committee and the secretary was instructed to execute and sign contract.

The committee and director Mullen visited the fair grounds and made a thorough examination of Power Hall and concluded that the dirt removed from Grand Avenue and Walnut Street entrances should be used to fill Power Hall and that a four inch concrete floor should be placed in this building. The superintendent of grounds was instructed to remove the floors and place cement caps on 11 piers. The finished floor line to be flush with the top of the present brick piers.

The committee accepted the proposition from O. F. Hall for placing 10x13 interlocking cement culvert across the street immediately east of Power Hall for the sum of $1.00 per lineal foot.

The committee decided to locate the Government exhibit in Power Hall, providing the space is satisfactory to the Government representative.

The secretary was authorized to order a number of allied flags to be used on Machinery Hall, Grandstand, Administration Building, Stock Pavilion and Agricultural Building.

President Cameron directed the secretary to notify the board that there would be a meeting of the State Board of Agriculture at ten o'clock a. m. Thursday, June 27th, for the purpose of filling the vacancy caused by the death of Mr. Olson, Vice President of the State Board of Agriculture, and to discuss general plans for the 1918 fair.

BOARD MEETING.

June 27, 1918

The board was called to order at ten a. m. with President Cameron in the chair.

The following members answered to roll call: Barney, Cameron, Corey, Morrow, Weaver, Davis, Reeves, Curtin, Tow, Legoe, Sheldon, Escher, Mullen and Pike.

The minutes of the board, executive committee and special committee meetings, commencing with the board meeting on February 7th, and concluding with the executive committee meeting on June 14 and 15 were read by the secretary. On motion the minutes were approved as read.

Mr. Cameron appointed as committee on resolutions Messrs. Curtin, Sheldon and Weaver. Mr. Cameron sugggested that the committee prepare appropriate resolutions in commemoration of the memory of the late Mr. Olson, Vice President of the State Board of Agriculture.

Secretary Corey read the following resolution which was adopted by the Minnesota State Agricultural Society.

Whereas: It has been brought to the attention of the Board of the Minnesota State Agricultural Society that Mr. O. A. Olson, Vice President of the Iowa State Fair Board, has recently been called to his final reward, and

Whereas: Through his long association as a member of the Iowa State Fair Board, Mr. Olson has been a frequent visitor to the Minnesota State Fair and a close friend and co-worker of the membership of this board, who by his earnestness and wise counsel has been found to be a great benefit to the board members of this fair and of the fairs of the surrounding states, there fore be it

Resolved, That this board tender to the bereaved family of Mr. Olson in this their hour of sorrow its sincere sympathy, and

Resolved Further, That this board tender to the Iowa State Fairs its appreciation of the loss which the board has sustained in the untimely death of Mr. Olson, and

Resolved Further, That this resolution be spread upon the minutes of this meeting and a copy thereof be forwarded to the Secretary of the Iowa State Fair Board.

Attest:

THOMAS CANFIELD,
Secretary-General Manager.

June 7, 1918.

Mr. Davis moved that the resolutions adopted by the Minnesota State Agricultural Society be spread upon the minutes of the department. Motion seconded by Mr. Reeves and carried.

President Cameron called the attention of the board to the vacancy of the office of vice president of the State Board of Agriculture, brought about by the death of Mr. O. A. Olson, Forest City, and requested that the board take some action to fill this vacancy as provided by statute.

Mr. Legoe moved that a formal ballot be taken. Motion seconded by Mr. Barney and carried.

The board was instructed by the president to prepare ballots to fill the office of vice president. The president announced after the ballots had been taken up that Mr. Mullen had received ten votes and Mr. Pike four.

Mr. Pike immediately moved the election of Mr. Mullen for vice president for the unexpired term be made unanimous. Seconded by Mr. Escher. Motion carried.

The matter of filling the vacancy of director in charge of admissions was discussed by the board. Mr. Escher moved that Mr. F. E. Sheldon, Mt. Ayr, be appointed director in charge of the admissions department. Motion was seconded by Mr. Weaver and carried.

The board proceeded to fill the vacancy in the agricultural department and the pantry and kitchen department. Mr. Davis moved that Mr. Weaver be made superintendent of the agricultural and pantry and kitchen departments. Seconded by Mr. Sheldon and carried.

Mr. Pike moved that the board adjourn until 1:30 p. m. Motion seconded and carried.

AFTERNOON SESSION.

The board reconvened at 1:30 p. m. with the following members present:

Cameron, Corey, Davis, Reeves, Curtin, Tow, Legoe, Sheldon, Escher, Mullen and Pike.

The committee on resolutions offered the following resolution:

Whereas: Mr. O. A. Olson, our vice president, departed this life on the 26th day of May, 1918, and whereas Mr. Olson for many years past has been prominently identified with this board, both as director and as vice president, and whereas the long continued and faithful service of Mr. Olson as said memberis known and appreciated by this board, therefore be it,

Resolved, by this board that in the death of Mr. Olson we feel we have lost one of our most influential members; the State of Iowa is deprived of the services of a very useful and able citizen and the board members themslves fel that they have sustained a very grat prsonal loss in his dath.

Be It Further Resolved that this boar tender to his bereaved wife and son, inthi s hour of their sorrow, our most sincere sympathy and condolence, and be it further

Resolved, that these resolutions be spread upon the permanent records of this board and that a copy of these resolutions, signed by the officers and directors, be forwarded to his family.

H. C. WEAVER,
F. E. SHELDON,
E. J. CURTIN,
Committee on Resolutions.

Mr. Curtin moved that the resolutions offered be adopted and spread upon the minutes. Seconded by Mr. Escher. Motion carried unanimously by standing vote.

The difficulty exhibitors will encounter should they desire to show live stock at the Illinois and Iowa fairs this year was brought to the attention of the board. Information was at hand indicating that the Illinois State Fair proposed to hold the live stock until four o'clock p. m. Friday the 23rd. The rules of the Iowa State Fair provide that all live stock must be on hand at nine o'clock a. m. Friday, August 23rd. Judging in the horse departments at the Iowa State Fair starts Friday morning and in the cattle and swine departments Saturday morning. In view of this situation and inasmuch as the stand taken by the Illlinois State Board of Agriculture precludes any possibility of breeders showing at both fairs, Mr. Davis moved that the Iowa State Board of Agriculture adhere to their dates as fixed by the board at the December meeting, which are the same relative dates on which the Iowa State Fair has been held for the past ten or twelve years, and that the board go ahead with the judging program as advertised in the premium list. Motion seconded by Mr. Sheldon and carried.

The fact that the pay of gate keepers and other helpers in the various departments at the fair had been $2.50 per day was brought to the attention of the board. The board gave the matter due consideration, and Mr. Pike moved that the gate keepers in the admissions department and all other helpers in the various departments who had been paid $2.50 in the past be paid $3.00 per day this year. Motion seconded by Mr. Sheldon and carried.

Mr. Curtiss moved that the board appropriate $100.00 for a stable manager's prize, to be awarded to exhibitors in the harness and saddle classes; the prizes to be divided as follows: $50, $25, $15, $10. The prizes to be awarded to managers or superintendents of stables winning the greatest number of ribbons, either blue, red, yellow or white in the show classes, with the same general conditions as those governing the stable manager's prizes in the pony classes and published in the 1918 premium list.

Mr. Mullen, member of the State Board of Agriculture from the Tenth filed his resignation as director from the district with the board.
district with the board.

Des Moines, Iowa, June 27, 1918.

To the Honorable Board of the State Fair:

I hereby tender my resignation as director for the Tenth Congressional District.
District.

Very truly yours,
J. P. MULLEN.

Mr. Escher moved the resignation of Mr. Mullen be accepted. Seconded by Mr. Legoe and carried.

The secretary presented the following recommendations relative to salaries of employees in the department; that the salary of Mr. Ivanhoe Whitted, superintendent of publicity, be raised from $1,800.00 to $2,000.00 per year; that the salary of L. D. Ramsey be increased from $1,500.00 to $1,620.00 per year, and that the salary of Miss Veva Beadle be increased from $900.00 to $1,020.00 per year.

Mr. Davis moved that the recommendations as to salaries made by the secretary be approved by the board, with the understanding that the increase start at the discretion of the secretary but not before July first. Motion seconded by Mr. Curtin. Motion carried.

PER DIEM AND MILEAGE.

Mr. Cameron appointed as committee on per diem and mileage, Messrs. Pike, Davis and Reeves.

The committee on per diem and mileage made the following report:

Mr. President: Your committee on per diem and mileage begs to report as follows:

Name.	Days.	Rate.	Amount.	Miles.	Amount.	Total
15106 C. E. Cameron	4	$4.00	$16.00	140	$14.00	$30.00
15107 H. O. Weaver	3	4.00	12.00	169	16.90	28.90
15108 E. T. Davis	3	4.00	12.00	121	12.10	24.10
15110 Elmer Reeves	3	4.00	12.00	126	12.60	24.60
15111 E. J. Curtin	3	4.00	12.00	195	19.50	31.50
15112 Cyrus A. Tow	3	4.00	12.00	112	12.20	23.20
15118 T. C. Legoe	3	4.00	12.00	85	8.50	20.50
15113 Chas. F. Curiss	3	4.00	12.00	37	3.70	15.70
15114 F. E. Sheldon	3	4.00	12.00	123	12.30	24.30
15115 Chas. Escher, Jr.	3	4.00	12.00	100	10.00	22.00
15116 John P. Mullen	3	4.00	12.00	117	11.70	23.70
15117 H. L. Pike	3	4.00	12.00	206	20.60	32.60
						$301.10

Respectfully submitted,
H. L. PIKE,
E. T. DAVIS,
E. M. REEVES.

Mr. Pike moved the report of the committee on per diem and mileage be adopted and the secretary instructed to issue warrants for the respective amounts. Seconded by Mr. Curtin and carried.

Mr. Mullen appeared before Mr. B. W. Garrett, Clerk of the Supreme Court and took the oath of office as vice president of the Iowa State Board of Agriculture.

The board proceeded to fill the vacancy in the Tenth District, caused by the resignation of Mr. J. P. Mullen of Fonda.

President Cameron called for nominations. Mr. Davis nominated Mr. Sears McHenry of Denison, Crawford County. The nomination was seconded by Mr. F. E. Sheldon and Chas. Escher, Jr. There being no further nominations the roll was called and the following members answered aye: Cameron, Mullen, Corey, Davis, Reeves, Curtin, Tow, Legoe, Curtiss, Sheldon, Escher and Pike.

Members absent—Morrow and Weaver.

Mr. Cameron declared Mr. Sears McHenry duly elected member of the State Board of Agriculture from the Tenth District.

On motion of Mr. Pike the board adjourned to meet at thecall of the president.

EXECUTIVE COMMITTEE MEETING.

July 11th.

Members present Corey and Mullen.

The secretary presented a proposition for purchasing the cement sidewalk blocks and granite coping along the state capitol grounds at the following prices:

16 in. stone coping, 25c per foot, delivered to fair grounds.

Cement sidewalk blocks five feet square 50c each, loaded on stone wagon at capitol grounds.

30 in. granite coping 50c for each stone 8 feet in length; also actual time for two men to assist in loading the stones.

The committee accepted the proposition from Mr. Crowley and Mr. Spry of the capitol extension department, and directed the superintendent to use the coping along the bank east of the Women's and Children's building and along the south side of the road leading into camp grounds near camper's headquarters; the cement sidewalk blocks to be used in extending the walk into the camp grounds.

The committee with Mr. Deemer, superintendent of grounds, spent some time in looking over minor improvements at the fair grounds and directed the superintendent to proceed with the following work:

Have drinking fountain placed in lobby of the Administration Building between the two doors of the machinery department offices.

Place an exhaust fan to ventilate new addition to private dining room; also one to ventilate sleeping rooms for colored help.

The superintendent was also directed to have a large exhaust fan placed in the east wall of the art gallery to ventilate the basement of the Women's and Children's Building; also paint all outside porch floors.

Put up at least a six foot fence around the children's play grounds. Make the necessary changes so that the passage way south of the stage may be used as a dressing room by the girls in the pageant and models in the style review.

Paint the walls in the room occupied by the Library Commission if deemed necessary.

The superintendent was authorized to buy or rent a boiler to be used in the brick dining halls on Grand Avenue.

Have spaces in Machinery and Power Halls renumbered.

Put in electric conduit to connect up light posts in driveway on Grand Avenue.

The superintendent of grounds was also directed to employ teams to haul manure from speed, cattle and horse barns to the capitol extension grounds at $2.00 per load, the same to be paid by the Capitol Extension Department.

The committee agreed to meet on Monday, July 15th, to confer with Dean Barr relative to food regulations governing concessions; also confer with General Beach and General Logan relative to policing the fair grounds and providing military features for the state fair.

EXECUTIVE COMMITTEE MEETING.

July 16-17-18.

The committee met with members Cameron, Mullen and Corey present.

The committee considered the proposition by Mr. Louis Meyer, New York City, representing the International Wrestling Tournament Corporation of New York City for putting on an international wrestling tournament in the Stock Pavilion. Contract was entered into whereby said corporation is to furnish twelve of the world's greatest wrestlers to put on a tournament in the Stock Pavilion Thursday, Friday and Saturday nights, August 29-31 inclusive. The total receipts to be divided 30% to the State Board of Agriculture and 70% to the wrestling corporation.

The committee also visited Camp Dodge and had a conference with General Beach and Colonel Lincoln relative to providing military features for the state fair.

The committee authorized the secretary to have a large state service flag made to be hung in the centerfield of the race track, providing the expense for same could be kept within $200.00.

The superintendent of grounds was instructed to build a portable ticket booth that might be set in the west entrance of the stock pavilion.

The secretary was authorized to pay Mrs. Cleggit, the cateress for the club dining hall $5.00 per day and the kitchen help $2.50.

The secretary presented a communication from A. F. Thaviu in which he asked for an allowance for the increase in railroad fare for the fifty-two people composing his band, from Chicago to Des Moines. The committee authorized the allowance of one cent per mile but notified him he would be expected to take care of the additional war tax and increase in Pullman rates.

The committee also authorized the state club leader to announce the state fair would continue its appropriation of $300 to the boys and girls calf feeding contest.

The superintendent of grounds was authorized to rent a boiler for the brick dining halls from Woods Brothers at $5.00 per day.

EXECUTIVE COMMITTEE MEETING.

August 3-4.

The committee met with members Cameron, Mullen and Corey present; also Director Davis.

The committee held a conference with the following officers and representatives of the Farmers' Union Exchange of Columbus Junction, Iowa:

O. E. Wilson, President, Columbus Junction; D. R. Ellis, Mgr., Columbus Junction; R. C. McDowell, Secy., Columbus Junction; Grant Kennedy, Coin; Geo. I. Baker, Turin; J. F. Garber, Weldon; C. E. Carnihan, Mt. Pleasant.

The purpose of the conference was to act upon the above organization's application for space. The Farmers' Union Exchange decided not to ask for space in their own name but in the name of the factory manufacturing the Madison line of tillage implements and other factories manufacturing implements handled by this organization should make application and be assigned space in the Shaver Building in the name of the firms manufacturing the articles. This was done with the understanding that the Farmers' Union might maintain headquarters in this building with the Madison people, and with the further understanding that no signs would be permitted on the outside of the building.

The secretary was authorized to employ a superintendent of bands and music for the period of the fair.

The Executive Committee and Mr. Davis, Superintendent of the Public Safety Department met with Colonel Lasher and Colonel Lucas and made arrangements to use the newly organized companies of the National Guard for policing the state fair grounds. It is understood and agreed that the board will pay the regular military pay for men and officers; furnish tents and mess and pay transportation expenses from home and return. It was agreed that about 200 men should be provided; one company to report for duty Tuesday, August 20; the balance of the men to report Thursday, August 22nd.

The secretary was authorized to have the stage in the Auditorium of the Women and Children's Building put in shape to properly stage the pageant "Wild Flowers of Iowa;" also for the wearing apparel review.

The committee also went over the proposition submitted by Colonel Francis McConnell of the Fourth Officer's Training School and agreed if they would put on a program as outlined on the afternoon and evening of Thursday, August 29, that the board would pay for the mess for the men Thursday evening; also provide an assembly tent at the head of Grand Avenue for a dressing tent.

The committee instructed the secretary to make an earnest effort to secure additional military features for the state fair.

The committee also accepted the proposition submitted by Lieut. Ketterer for bringing the Great Lakes Training Station Band to the Iowa State Fair. It is understood the board will provide headquarters for the band in Power Hall near the government exhibit; pay transportation expenses to and from the city and provide two meals each day for the men in the band.

The committee accepted the proposition of Potts Bros., for laying a four inch cement floor in Power Hall at eleven cents per square foot.

The committee met with Mr. Logsdon, executive secretary of the U. S. Food Administration, relative to providing sugar for the eating houses at the state fair grounds; also for the purpose of ascertaining how the eating houses and other concessionaires would be considered by the Food Administration Department.

EXECUTIVE COMMITTEE MEETING.

August 31, 1918.

The committee held no regular meetings but met at such times as were necessary to transact the business during the fair and to adjust such matters as were brought to their attention.

The committee decided to admit the Army Y. M. C. A., Knights of Luther and K. C. workers in uniform, the same as soldiers.

The Red Cross nurses stationed at Fort Des Moines were provided with admission for one day.

The committee appropriated $100.00 for prizes in the Army Officer's Running Race; also $30.00 for Roman Standing Race to be put on four days by boys from Camp Dodge.

The committee also authorized the secretary to purchase two heavy saddles at a cost of $212.00 and present same to boys from Camp Dodge who were to take part in the wild west program and ride the bucking bronchos.

F. M. Barnes, incorporated, was allowed the increase in railroad fare for sixty performers from Chicago to Des Moines, which amounted to $4.28 each, or a total of $256.80. A. F. Thaviu was also allowed the increase in railroad fare for forty-seven people in his band and ballet from Chicago to Des Moines and return, which amounted to $8.56 each or $402.32.

MEETING STATE BOARD OF AGRICULTURE.
August 31, 1918.

On roll call the following members responded: Cameron, Mullen, Corey, Davis, Reeves, Curtin, Legoe, Curtiss, Sheldon, Escher, McHenry and Pike.

The secretary presented the protest of J. H. Dwight, Des Moines, Iowa, in the poultry department. Mr. Curtin moved that inasmuch as the protest was based on incompetency of the judge that it be not considered by the board and that the $10.00 protest fee be returned to Mr. Dwight.

Mr. Davis moved that the executive committee work out a plan for unloading hogs and sheep and the equipment carried by the live stock exhibitors in order to get away from overcharges made by the draymen during the 1918 fair.

Mr. Gibson presented a bill for $197.00 for services of the men in charge of the Sanitation Department. Mr. Sheldon moved that the bill be allowed and the secretary issue checks for the proper amounts.

The following payrolls were presented by the superintendents:

C. F. Curtiss, Supt., Payroll Horse Department	$1,381.50
A. L. Denio, Asst. Supt., Payroll Speed Department	734.25
H. I. Pike, Supt., Payroll Cattle Department	1,044.38
Cyrus A. Tow, Supt., Payroll Swine Department	573.00
Chas. Escher, Jr., Supt., Payroll Sheep Department	343.00
V. G. Warner, Supt., Payroll Poultry Department	336.50
J. P. Mullen, Supt., Payroll Machinery Department	741.90
H. C. Weaver, Supt., Payroll Agricultural Dept.	575.00
E. M. Reeves, Supt., Payroll Horticultural Dept.	120.11
Wesley Greene, Supt., Payroll Floricultural Dept.	168.00
T. C. Legoe, Supt., Payroll Exposition Department	382.46
W. W. Morrow, Treas., Payroll Treasurer's Office	1,840.75
C. E. Cameron, Supt., Payroll Auto Parking-Police	189.50
Sears McHenry, Supt., Payroll, Ticket Auditing Department	340.00
B. M. Breed, Supt., Payroll Concession Department	2,205.00
N. W. McBeath, Supt. Payroll Admission Dept.	3,264.85
A. R. Corey, Secy., Payroll Boy's Camp	195.50
A. R. Corey, Secy., Payroll Graphic and Plastic Arts	223.54
A. R. Corey, Secy., Payroll Property Men	226.50
A. R. Corey, Secy., Payroll Forage Department	649.50
A. R. Corey, Secy., Payroll Campers' Hdqts.	218.00
A. R. Corey, Secy., Payroll Awards Department	138.39
A. R. Corey, Secy., Payroll Baby Health Department	243.00
A. R. Corey, Secy., Payroll Day Nursery	155.50
A. R. Corey, Secy., Payroll Educational Department	602.90
A. R. Corey, Secy., Payroll Boys' Judging Contest	65.00
A. R. Corey, Secy., Payroll Live Stock Sanitation Department	197.00
A. R. Corey, Secy., Payroll Secretary's Department	849.11
A. R. Corey, Secy., Payroll Wrestling Tournament	110.40
W. W. Morrow, Treas., Payroll No. 19, Grounds	5,495.21
A. R. Corey, Secy., Additional Payroll Baby Health Department	550.00

Mr. Escher moved that the payrolls as read be allowed and that the secretary be requested to issue checks for the respective amounts and place them to the credit of the superintendent's payroll accounts at the Central State Bank, and that the superintendents be authorized to issue payroll checks against said accounts.

The matter of making donations to the mess fund of the Remount Depot, 163rd Brigade, was brought to the attention of the board. Mr. Corey informed the board that the following donations had already been made: Two saddles, costing $212.00 for the boys at the Remount Depot; $100.00 purse for Officer's Running Race; $120.00 for the Four Roman Standing Races and $110.00 to Sergeant Venerable for prizes won in the jumping contests. It was also assumed that the boys who participated in the military features would present a bill for their meals and transportation, amounting to approximately $200.00. In addition to these donations the board contributed $200.00 to the mess fund. This amount to be divided equally between the boys of the Remount Station and the 163rd Depot Brigade.

Mr. Legoe moved that the secretary and treasurer be allowed $25.00 on account of extra expense during fair week.

Mr. Weaver moved that the secretary work out a plan whereby the directors would not be required to sign statistical checks at any gate.

The secretary presented a revision of salaries for the regular employes in the secretary's office. The following recommendations were made: that the salary of Mr. L. D. Ramsey be raised from $135.00 to $140.00; that of Mr. G. E. O'Brien from $140.00 to $150.00; that of Miss Edith W. Smith from $110.00 to $125.00; that of Mrs. Jeanette Graves from $85.00 to $100.00, and Miss Veva Beadle from $85.00 to $100.00.

Mr. Escher moved that the increases in salaries as recommended by the secretary be approved by the board to take effect September, 1918. Seconded by Mr. Mullen and Mr. Davis. Motion carried.

Mr. Cameron appointed the following committee on per diem and mileage: Mr. H. I. Pike, Mr. T. C. Legoe and Mr. F. E. Sheldon.

The committee on per diem and mileage made the following report:

Mr. President: Your committee on per diem and mileage beg to report as follows:

	Name.	Days.	Rate.	Amount.	Miles.	Amount.	Total.
15274	C. E. Cameron	22	$4.00	$88.00	140	$14.00	$102.00
15275	J. P. Mullen	22	4.00	88.00	117	11.70	99.70
15276	H. O. Weaver	22	4.00	88.00	169	16.90	104.90
15277	E. T. Davis	22	4.00	88.00	121	12.10	100.10
15278	Elmer Reeves	22	4.00	88.00	126	12.60	100.60
15279	E. J. Curtin	22	4.00	88.00	195	19.50	107.50
15280	Cyrus A. Tow	22	4.00	80.00	112	11.20	99.20
15281	T. C. Legoe	22	4.00	88.00	85	8.50	96.50
15282	Chas. F. Curiss	22	4.00	88.00	37	3.70	91.70
15283	F. E. Sheldon	22	4.00	98.00	123	12.30	100.30
15284	Chas. Escher, Jr.	22	4.00	88.00	100	10.00	98.00
15285	Sears McHenry	22	4.00	88.00	129	12.90	100.90
15286	H. L. Pike	22	4.00	88.00	206	20.60	108.60
							$1,310.00

Respectfully submitted,

H. L. PIKE,
T. C. LEGOE,
F. E. SHELDON.

Mr. Mullen moved that the board adjourn to meet at the call of the president.

EXECUTIVE COMMITTEE MEETING.

October 11.

Members present: Cameron, Mullen and Corey.

The committee went over all the claims by the secretary since the close of the fair; also all unpaid claims on file and authorized payment of same.

The communication from Mr. B. O. Gammon, Secretary American Polled Hereford Breeders' Association, in which he indicated he would like to rent one of the frame cattle barns at the state fair grounds for the purpose of stabling cattle during the winter months, was brought to the attention of the committee. The committee authorized the secretary to lease Mr. Gammon cattle barn No. 13, at a rental of $15.00 per month, beginning November 1. This rental to include water for the stock.

The secretary informed the committee that Dodd & Struthers had indicated they would sell their building near the Giant Coaster to the state. The committee inspected the building and agreed that the matter should be submitted to the board at their December meeting.

The committee made the following donations to military organizations participating in events at the fair:

Lt. Geo. E. Ketterer, in charge of recruiting station for advertising purposes, $100, on account of concerts rendered by the Great Lakes Naval Training Station Band during the full period of the fair.

Major Brooks P. Sparks, commander Remount Depot, $100.00. This in addition to the $200.00 appropriated by the board and made on account of the Remount Depot filing no bill for subsistence for men or forage for horses used in putting on the wild west features at the fair.

The matter of donating $500.00 for incidental expenses to government aviators who appeared at the fair on August 29 was brought to the attention of the committee; also the communication from Mr. Ralph Bolton, secretary of the Greater Des Moines Committee, stating the aviators left bills amounting to between five and six hundred dollars for incidental expenses. The committee suggested that inasmuch as the aviators appeared in but one flight, and then at six o'clock instead of three o'clock as advertised and instead of two flights with full crews at three o'clock on Thursday and Friday, that the committee pay half of the expense bill incurred by the aviators while in Des Moines, providing the officer in charge did not demand the $500.00 donation as per agreement in the telegram.

The committee approved payment of these bills which were paid by the secretary during the period immediately following the state fair and up to October 12th.

MEETING AUDITING COMMITTEE.

October 15.

The auditing committee met with members Sheldon and Reeves present.

The committee approved payment of all paid bills that were approved and paid by the Executive Committee since the last meeting of the auditing committee.

The committee also approved payment of all unpaid claims on file.

MEETING STATE BOARD OF AGRICULTURE

Wednesday, December 12, 1918.

The board met at ten o'clock A. M. with President Cameron in the chair. The following members responded to roll call: Cameron, Mullen, Morrow, Corey, Reeves, Curtin, Legoe, Curtiss, Sheldon and Pike.

The secretary proceeded to read the minutes of the board and committee meetings beginning with the minutes of the board meeting on June 27th and concluding with the minutes of the Executive Committee on November 8th and 9th.

Mr. Curtin moved the minutes be approved as read. Motion seconded by Mr. Mullen and carried.

Mr. Mullen moved the old board adjourn sine die. Seconded by Mr. Sheldon. Motion prevailed.

Mr. J. V. Arney, Deputy Clerk of the Supreme Court, appeared before the board and administered the oath of office to the following newly elected officers and members of the State Board of Agriculture: C. E. Cameron, President; J. P. Mullen, Vice President, and Directors E. J. Curtin, T. C. Legoe and F. E. Sheldon.

The secretary called the roll and the following members responded: Cameron, Mullen, Morrow, Corey, Reeves, Curtin, Legoe, Curtiss, Sheldon and Pike.

The board proceeded to elect a secretary, treasurer and superintendent of grounds.

Mr. Curtin moved A. R. Corey be elected secretary to succeed himself at a salary of $3,500 as fixed by statute and that he be required to give a surety bond of $10,000, and the premium amounting to $25.00 on said bond to be paid out of funds of the department. Seconded by Mr. Mullen. Motion carried.

Sheldon moved that W. W. Morrow, Afton, Iowa, be elected treasurer at a salary of $100.00 per year, as provided by statute, and that he be required to furnish a bond of $100,000. Seconded by Mr. Reeves. Motion carried.

Mr. Legoe moved the matter of employing a superintendent of grounds be delegated to the Executive Committee. The salary of the superintendent not to exceed $1,500 per annum, with the usual privileges of house rent and the right to keep a limited number of cattle, hogs and poultry on the grounds. Seconded by Mr. Curtin and carried.

The secretary presented to the board a plan for handling the incoming and outgoing exhibits and paraphernalia carried by live stock exhibitors and horsemen; also for handling the litter from barns and pens during the period of the fair.

Mr. Legoe moved that the suggestion made by Mr. Corey, providing for eight or ten flat beds or boxes for carrying out this work be adopted and that the Executive Committee be instructed to build these boxes. Also that the Executive Committee be instructed to work out a schedule of prices for unloading exhibits and equipment belonging to exhibitors. Seconded by Mr. Pike. Motion carried.

The matter of buying thirty or forty acres of additional land north of the race track, to be used for the purpose of parking automobiles, was discussed at length by the board. The secretary informed the board that it would be possible to purchase the west eleven acres of this tract, lying along Thirtieth Street, for the sum of $9,000.

Mr. Curtiss moved that the Executive Committee be instructed to close contract for the eleven acres for the sum of $9,000. $1,000 to be paid on date the contract is executed and the balance of $8,000 to be paid on or before May 1, 1919. Seconded by Mr. Sheldon and carried.

The Board discussed the matter of building two additional sections to the grandstand, to be paid for out of state fair funds.

Mr. Reeves moved that the Executive Committee employ an architect to prepare plans and specifications for these two sections and to secure bids for the construction of same. Mr. Pike seconded the motion and motion prevailed.

The Executive Committee recommended the following list of superintendents for the ensuing year.

Public Safety	E. T. Davis, Iowa City.
Admissions	F. E. Sheldon, Mt. Ayr.
Ticket Auditing	Sears McHenry, Denison.
Concessions and Privileges	A. R. Corey, Des Moines.
Grounds	J. H. Deemer, Des Moines.
Live Stock Sanitation	J. I Gibson, Des Moines.
Horses	C. F. Curtiss, Ames.
Speed	E. J Curtin, Decorah.
Cattle	H. L. Pike, Whiting.
Swine	Cyrus A. Tow, Norway.
Sheep	Chas. Escher, Jr., Botna.
Poultry	V. G. Warner, Bloomfield.
Implements and Machinery	J. P. Mullen, Fonda.
Pantry Stores and Apiary	H. O. Weaver, Wapello.
Agriculture	H. O. Weaver, Wapello.
Dairy	W. B. Barney, Des Moines.
Horticulture	E M. Reeves, Waverly.
Floriculture	Wesley Greene, Des Moines.
Exposition Building, Textile, China	T. C. Legoe, What Cheer.
Educational	F. C. Bishop, Ames.
Publicity and Advertising	Ivanhoe Whitted, Des Moines.

Mr. Curtiss moved the list be approved by the Board. Seconded by Mr. Pike. Motion carried.

The Board discussed at length the matter of improvements at the grounds for the coming year; also the budget for appropriations to be presented to the legislature.

Mr. Legoe moved the Executive Committee be instructed to prepare a bill asking for an appropriation of $35,000 to purchase additional land north of the race track and $15,000 for paying city assessment for curbing and paving on East Thirtieth Street and North Avenue. Mr. Curtiss seconded the motion. Motion carried.

Mr. Pike moved the Executive Committee be directed to prepare a bill asking for an appropriation of $150,000 to complete the cattle barn. This appropriation to be available in 1920. Seconded by Mr. Reeves and carried.

Mr. Curtin moved that the secretary be instructed to have suitable medals made and presented to Mr. Ray Lampkin, Mr. T. Fred Henry and Mr. Ed Allen. The medal to be presented to Mr. Lampkin for establishing the world's auto race record on half mile track during the 1918 fair for ten, fifteen, twenty and twenty-five miles; to Mr. T. Fred Henry for his long and efficient service at the Iowa State Fair as director of Henry's Band, and to Mr. Ed Allen for driving Single G. to a world's record of 2:01 on half mile track during the 1918 Iowa State Fair. Motion seconded by Mr. Mullen and carried.

Mr. Cameron appointed Mr. Pike and Mr. Legoe committee on per diem and mileage.

Mr. Curtiss moved the secretary forward the resignation of the Iowa State Fair to the American Association of Fairs and Expositions; that the Iowa State Fair become a member of the International Association of Fairs and Expositions, and that the secretary be authorized to issue a warrant for annual dues in the sum of $100. Seconded by Mr. Mullen and carried.

The committee on per diem and mileage made the following report:

December 12, 1918.

Mr. President: Your committee on per diem and mileage beg to report as follows:

	Name.	Days.	Rate.	Amount.	Miles.	Amount.	Total.
15667	C. E. Cameron	6	$4.00	$24.00	140	$14.00	$38.00
15668	J. P. Mullen	6	4.00	24.00	117	11.70	35.70
15669	H. O. Weaver	5	4.00	20.00	169	16.90	36.90
15670	E. M. Reeves	6	4.00	24.00	126	12.60	36.60
15671	E. J. Curtin	6	4.00	24.00	195	19.50	43.50
15672	T. C. Legoe	6	4.00	24.00	85	8.50	32.50
15673	C. F. Curtiss	6	4.00	24.00	37	3.70	27.70
15674	F. E. Sheldon	6	4.00	24.00	123	12.30	36.30
15675	Sears McHenry	5	4.00	20.00	129	12.90	32.90
15676	H. L. Pike	6	4.00	24.00	206	20.60	44.60
							$364.70

Respectfully submitted,

T. C. LEGOE
H. L. PIKE.

Mr. Curtin moved the report of the committee on per diem and mileage be approved as read and that the secretary be instructed to draw warrants for the respective amounts. Seconded by Mr. Sheldon and carried.

Mr. Reeves moved that the board adjourn to meet on January 7 and 8. Seconded by Mr. Pike. Meeting adjourned.

PART II

Proceedings of State Agricultural Convention

THURSDAY, DECEMBER 11, 1918.

The convention was called to order by President C. E. Cameron, at ten fifteen o'clock. Vice President J. P. Mullen was called to the chair.

Mr. Mullen, Vice President: Gentlemen: The first number on the program this morning will be the annual address of the President, Mr. C. E. Cameron.

PRESIDENTS' ADDRESS.

C. E. Cameron—Alta.

Gentlemen of the Convention and Members of the Board of Agriculture. How time flies! It seems such a short time since we met in this room a year ago. And what a year it has been! What extraordinary things have happened! In smashing the mighty Prussian war machine the unbelievable has been accomplished and the menace of Hun autocracy removed, we hope forever. The world has had cause to mourn and reason to rejoice. We have gone down into the Valley of the Shadow and we have trod the high trails of sunshine and exultation.

The world war has been brought to a glorious termination in favor of the Allied Armies, which is to say in favor of humanity and righteousness. The year has been one of trial for the American people. They have come through it stronger, more virile, with greater courage and a satisfying knowledge of hitherto undiscovered founts of independence and resourcefulness.

A year ago America was just getting started in the war. Absolutely unprepared when war was declared it took months of earnest preparation and organization before we could contribute to the actual campaign. While grateful for our coming the Allies were somewhat doubtful of our ability to cut very much of a figure for two or three years to come. Germany was openly skeptical and not at all disturbed. You know the rest of it. You know how quickly the balance was swung in favor of the Allies, thanks to American efficiency and methods of organization.

Our own great state has had a liberal share in it all. First in agriculture and meat production, Iowa's responsibilities overtopped and overshadowed those of other and less favored commonwealths. For an army has to be fed, else defeat is quick and certain. It was to Iowa and other states of the Middle West that the National Food Administrator turned in the nation's extremity. And there were other calls, but whatever their nature, men for the navy, for the trenches, for shipbuilding and munitions making, for Liberty Bonds, the Red Cross and the many other war activities, Iowa has been the first to go over the top in support of the nation's war program.

Patriotism has been fairly rampant in Iowa. It is a Hawkeye characteristic; seems to be absorbed from the air and the soil. Our splendid Iowa boys were among the first to land in France and they have given the Huns a taste of Iowa mettle. More than eighty thousand of them are wearing the army and navy uniforms and nobody knows how many more have gone out of the state to do their bit in the various industries intimately connected with the pushing of the war.

We are all proud of our county and properly puffed up over the wonders accomplished in the last year. We are proud of the part Iowa has borne in the war. We are proud of Iowa people who have cheerfully given all that has been asked, and who have so enthusiastically carried out the orders and recommendations of the nation's leaders. And now that we are called on to face the trying tasks of reconstruction I have an abiding faith in our state. I know it will not be found wanting.

Death has been very busy since we met here one year ago. It has invaded our firesides as well as the firing line. Our friend and fellow worker, O. A. Olson, vice president of the state fair, was among the many called to pay the last debt of nature. He served the Iowa State Fair long and well. He was the soul of honesty and honor. In his passing not only the fair but all Iowa lost a loyal booster and a patriotic citizen. There are few men like O. A. Olson and his going leaves a vacancy in our hearts that can never be satisfied.

Iowa has been abundantly blessed and prospered the last year. Nature has contributed of her bounties with lavish hand. Iowa's Horn of Plenty has been filled to overflowing and the vast surplus has gone out and across the Atlantic to feed the armies and the hungry thousands who are the immediate victims of war.

We harvested an unusual acreage of wheat. The oats crop was another record breaker. With the exception of a small portion of the state the corn crop was of the bumper sort. Not in years has there been so little hog cholera in the state, and one feels that Providence has worked side by side with the farmer to bring about the everlasting downfall of the blasphemer of Berlin with his ridiculous claims of partnership with "Gott".

Last week the annual meeting of the American Association of Fairs and Expositions was held in Chicago. The program was one of the best ever presented in the history of the association. The interest taken in the meeting by representatives of the government was significant and has an important bearing on the future. Three representatives from Washington were present and took an active part in the proceedings. They were, Mr. F. Lamson Scribner, Expert on Exhibits and Chairman of the Joint Committee on Government War Exhibits; Mr. Chester I. Campbell, Director of the Allied War Exposition, and Mr. R. H. Aishton, Regional Director of the United States Railroad Administration.

It is a satisfaction to know that at last the Government heads at Washington are becoming interested in the great work the agricultural fairs of the country are doing, and that they recognize the possibilities for reaching the people in this way. The government men assured us that they are in hearty accord with the work of the fairs and that we may count on them in the future. I know you understand what this means and that you appreciate it. The government exhibits at the fairs this year were universally satisfactory. They proved a strong drawing card, and now that the war is over the government will be in a position to give much more attention to this newly-created department.

Now I want to talk to you a little about our own great state fair and the fair work in Iowa. When we consider the unusual conditions with which fair workers had to contend this past season we realize that we have grounds for congratulation on the success achieved. Some fairs lost money this year, it is true;

but in most cases the amount was insignificant, and not a single fair suffered to the extent that it need be hampered for future operations.

I feel that the immediate future holds much of promise to fair workers. Agriculture is the greatest and noblest of all industries. It is the basis and support of all other enterprises. Now, with the ending of the war, come problems of reconstruction and in the case of both France and Belgium the work of rehabilitation. And as the war involved all the nations of the earth the results of more than four years of wholesale destruction will have to be overcome. The loss will have to be made up. There is only one way to accomplish this and that is by means of a world-wide industrial revival, manufactures, etc. The world will have to work early and late, long and hard. The millions of workers will have to live, will have to be fed.

So you see it all goes back to the land, back to the farmer, back to the man who grows bread and meat. He is facing the biggest job of his life today. And in such matters as labor and soil deterioration he is probably handicapped more heavily than ever before. Right here lies the duty of the agricultural fair, to uphold the hands of the workers, to lead in the search for better methods of farming, to teach efficiency, to encourage and to educate. If the agricultural fair had a mission before that mission has been amplified a hundred times. Your responsibility as leaders is growing instead of diminishing. There is an unlimited amount of work to do. There is a vast field still open for missionary endeavor. The average yield of corn per acre in Iowa runs about thirty-three to thirty-six bushels. The average yield of wheat is only about sixteen or seventeen bushels. The twenty-year average for oats is only thirty-two bushels to the acre. These averages can be raised far above those figures and it is up to the agricultural fairs to see that they are raised. There is still plenty of scrub stock in evidence, also plenty of scrub farms and scrub farmers. The leaven that shall in time transform farming and stock growing in Iowa to a state that will be 100 per cent perfect will be disseminated through the medium of the agricultural fairs.

Financially and otherwise our state fair was a success this year. I believe it went beyond our expectations. While exhibits in some departments show a slight falling off the reasons for it were plain. In matters of interest and influence it was fully up to the standard and above the average for the last ten years.

If it is to continue to grow in usefulness consistent with increasing attendance and interest, accomodations will have to be provided and equipment enlarged as the need arises. If the public demands comfort when visiting the fair it is asking no more than its rights. For one thing the attendance is rapidly outgrowing the grandstand's seating capacity. I would recommend that two new sections be added to the present structure, one at either end.

We need more and better stabling for cattle. The horse, sheep and swine departments are splendidly equipped to handle exhibits, safely and comfortably. In the cattle department it is another story. This department is poorly equipped and wholly insufficient for the demands made upon it year after year. In the matter of pedigreed cattle of the various breeds Iowa leads all other states. In like manner the state fair cattle show outstrips all other fair shows both in numbers and quality. Many of the animals exhibited are priceless. Some of the old stables where these valuable animals have to be housed are uncomfortable, unsanitary and unsafe. The risk of stabling cattle in such insufficient shells is great. I sincerely hope that in the near future we can put up a fire-proof building that will be consistent with the needs of exhibitors and on a scale befitting the cattle industry of the state.

Our very newest problem—and one of the most perplexing—is the disposition of the swarm of automobiles that come to the fair. Approximately forty-five thousand machines passed through the gates this year. Every foot of available parking space was occupied early each day. The overflow filled the woods and the camp grounds. Streets and avenues were so crowded and jammed at times that it was hard even for pedestrians to get about. Some sort of a plan or system for taking care of them will have to be worked out at once. It is one of the things that cannot wait, either, for another fair will find them growing in numbers.

The great war brought us many problems. Old methods have been pushed to the rear and long-cherished ideals have gone by the board, never to return. As a nation we have been jolted out of ourselves and our growing apathy in certain lines. We all feel the urge of new ambitions. Our country is going to reach out to the uttermost corners of the earth for trade. American goods, American farm products and American live stock will circle the earth. America will be dominant. A new era is dawning for producers of foodstuffs. The agricultural fairs have an important part to play. Iowa will have an important part to play. We are all a part of it. And while our responsibilities will be many our opportunities for achievement will be correspondingly numerous. I have faith to believe we shall do our part, even unto the end.

President Cameron appointed the following committees:

Committee on Credentials—H. L. Pike, Monona County; Geo. White, Mills County; Frank C. Young, Davis County.

Committee on Resolutions—L. R. Pike, Harrison County; H. O. Weaver, Louisa County; E. T. Austin, Marshall County.

REPORT OF SECRETARY

A. R. COREY

The following brief report of the activities of the Department of Agriculture and the Iowa State Fair is presented to the delegates in attendance at the State Agricultural Convention. A complete report covering the board and committee meetings, a list of the awards at the 1918 state fair, along with comments on the fair by the agricultural press, will be published in the Iowa Year Book of Agriculture.

A separate report covering the Stallion Registration Division will be published as a supplement to the year book, and will give a complete report of the division and a directory of all stallion owners.

STALLION REGISTRATION DIVISION

During the period from January 1, to November 30, 1918, the department enrolled 4,216 pure bred stallions, 1,195 grade stallions, 597 pure bred jacks and 440 grade jacks.

These figures show a decrease of 1,564 stallions. Of this number 536 were grade stallions and 195 were Standardbred, leaving a decrease of 833 in the pure bred draft stallions.

The records show that 78 percent of the stallions and 58 percent of the jacks in the State of Iowa are of pure breeding.

The following tabulation shows the number and kind of certificates issued; the amount of fees collected and the amount deposited with the Treasurer:

Kind of Certificate Issued	No. Issued	Fees	Total Fees
Pure Bred Stallions:			
Original certificates	593	$ 1.00	$ 593.00
Transfer certificates	664	.50	332.00
Renewal certificates	3623	1.00	3,623.00
Grade Stallions:			
Original certificates	196	1.00	196.00
Transfer certificates	131	.50	65.50
Renewal certificates	999	1.00	999.00
Pure Bred Jacks:			
Original certificates	216	1.00	216.00
Transfer certificates	127	.50	63.50
Renewal certificates	381	1.00	381.00
Grade Jacks:			
Original certificates	127	1.00	127.00
Transfer certificates	75	.50	37.50
Renewal certificates	313	1.00	313.00
			$6,946.50

Deposited with Treasurer, $6,946.50.

STATE PUBLICITY BUREAU.

The State Publicity Bureau, which is financed out of receipts of the state fair and the balance of fees above operating expenses in the stallion registration division, devoted several editions of Greater Iowa to conservation and production campaigns advocated by the U. S. Government. Among the editions that received favorable mention was the number devoted to boys' and girls' club work, which laid special stress upon calf and pig club work; acre corn contests and all sorts of canning and conservation club work. Another issue took up the wheat campaign and another the silo building campaign. The department, through Greater Iowa, assisted quite materially in putting Iowa over the top in all these campaigns.

FARMERS' INSTITUTES AND SHORT COURSES.

The following table deals with the farmers' institutes and short courses held during the period from July 1, 1917 to June 30, 1918.

The table shows the location of institutes; number of sessions; total attendance and the amount of state aid paid each institute and short course.

There was a marked decrease in the number of institutes held during the past year. This may be accounted for by the meetings held under the direction of the county agents and farm bureaus, which took place of the institutes in a great many counties.

There were only two short courses held this year that drew state aid. The law under which this aid is paid provides that a short course must stay in session not less than four days. The Extension Department of the Iowa State College, which provides speakers and instructors, adopted a plan during the past season which required each crew to put on two three-day short courses a week, which made it impossible for a number of associations to meet the requirements of the law.

FINANCIAL STATEMENT OF COUNTY FARMERS' INSTITUTE IN IOWA FOR FISCAL YEAR JULY 1, 1917, TO JUNE 30, 1918.

Number	Counties	Number of sessions	Total attendance	Receipts				Disbursements						Number
				Cash on hand	Miscellaneous receipts	State aid	Total receipts	For speakers and judges	Premiums	Miscellaneous expense	Total disbursements	Cash on hand	Overdrafts	
1	Adair (Adair)	5	300	$ 41.83	$ 102.00	$ 37.50	$ 181.33	$ 17.20	$ 63.50	$ 35.95	$ 116.65	$ 64.68		1
2	Adair (Canby)	4	200	144.00	199.00	37.50	380.50	17.10	145.01	61.08	223.19	157.31		2
3	Allamakee (Waterville)	8	825	317.54	49.00	75.00	441.54	76.28	56.50	16.78	149.56	291.98		3
4	Appanoose (Moravia)	9	4,000	125.69	193.21	25.00	343.90	9.70	125.40	42.45	177.55	166.35		4
5	Appanoose (Moulton)	4	600	63.28	157.80	25.00	246.08	12.80	88.79	67.67	169.26	76.82		5
6	Appanoose (Udell)	19	10,600	9.54	139.00	25.00	173.54	32.29	77.80	63.45	173.54			6
7	Benton (Vinton)	2	225	80.65		64.45	145.10	25.54	29.00	9.91	64.45	80.65		7
8	Black Hawk (Hudson)	7	1,300			75.00	75.00	46.50		34.00	80.50		$ 5.50	8
9	Boone (Boxholm)	5	400	27.07	161.25	75.00	263.32	17.34	95.75	31.41	144.50	118.82		9
10	Bremer (Janesville)	5	435			56.60	56.60	17.55	6.00	33.05	56.60			10
11	Buchanan (Independence)	6	1,600	172.20	12.78	75.00	259.98	22.00		53.00	75.00	184.98		11
12	Calhoun (Rockwell City)	7	700	76.43	186.25	75.00	337.68	42.27	125.25	55.42	222.94	114.74		12
13	Cedar (Massillon)	5	530	25.29	160.80	37.50	223.59	25.79	108.00	48.98	182.77	40.82		13
14	Cedar (West Branch)	3	475	82.20	77.65	37.50	197.35		62.30	46.96	109.26	88.09		14
15	Cerro Gordo (Clear Lake)	7	1,000		132.75	28.75	161.50	20.15		74.50	94.65	66.85		15
16	Cerro Gordo (Plymouth)	2	150			17.50	17.50	14.33		3.17	17.50			16
17	Cerro Gordo (Swaledale)	3	510		20.00	28.75	48.75	10.76	20.00	12.00	42.76	5.99		17
18	Cherokee (Cherokee)	3	450	18.17	111.33	62.35	191.85	15.70	34.25	12.40	62.35	129.50		18
19	Clayton (Edgewood)	8	1,500	43.30	165.15	75.00	283.45	21.95	62.50	58.00	142.45	141.00		19
20	Clinton (Low Moor)	5	625		269.41	75.00	344.41	26.51	56.11	202.29	284.91	59.50		20
21	Dallas (Woodward)	8	1,300	197.23	92.75	75.00	364.98	14.71	137.00	59.26	210.97	154.01		21
22	Delaware (Manchester)	8	2,650	101.80		75.00	176.80	41.60	40.00	86.50	168.10	8.70		22
23	Dickinson (Milford)	5	575	95.98	167.00	75.00	337.98	66.99	10.00	112.16	189.15	148.83		23
24	Dubuque (Cascade)	7	2,050		273.90	75.00	348.90	83.03	150.75	85.40	319.18	29.72		24
25	Floyd (Marble Rock)	7	1,500	60.02	35.00	75.00	170.02	13.54	10.00	80.38	103.92	66.10		25
26	Fremont (Sidney)	7	2,400	35.00	750.00	75.00	860.00	40.54	691.75	63.25	795.54	64.46		26
27	Hamilton (Homer)	3	275	7.50		75.00	82.50	21.38	29.50	27.53	78.41	4.09		27
28	Hancock (Britt)	5	1,900		66.00	75.00	141.00	36.65	36.00	66.20	138.85	2.15		28
29	Hardin (Ackley)	11	1,950	379.98	828.80	75.00	1,283.78	102.62	351.90	200.00	654.52	629.26		29
30	Harrison (Modale)	5	500	85.77	161.64	75.00	322.41	37.26	54.75	78.12	170.13	152.28		30

FINANCIAL STATEMENT—Continued.

Number	Counties	Number of sessions	Total attendance	Receipts: Cash on hand	Receipts: Miscellaneous receipts	Receipts: State aid	Receipts: Total receipts	Disbursements: For speakers and judges	Disbursements: Premiums	Disbursements: Miscellaneous expense	Disbursements: Total disbursements	Disbursements: Cash on hand	Disbursements: Overdrafts	Number
31	Henry (Mt. Pleasant)	5	2,000		476.11	75.00	551.11	20.92	464.50	95.24	580.66		29.55	31
32	Howard (Cresco)	9	300			48.75	48.75	39.25		9.50	48.75			32
33	Jasper (Colfax)	5	2,500	12.81	622.63	75.00	710.44	31.53	465.00	94.43	590.96	119.48		33
34	Jefferson (Cross Lanes, Pleasant Plain, Beckwith)	6	1,200	6.19	250.24	75.00	331.43	60.28	202.70	43.35	306.33	25.10		34
35	Johnson (Iowa City)	5	700	5.72	303.36	37.50	346.58	47.91	193.94	135.25	377.10		30.52	35
36	Johnson (Sharon Center)	7	525	3.00	43.00	37.50	83.50	37.62	40.00	7.04	84.66		1.16	36
37	Jones (Anamosa)	11	450	26.35	75.25	75.00	176.60	25.59	50.00	55.16	130.75	45.85		37
38	Keokuk (Thornburg)	3	900	161.44	1,686.20	75.00	1,922.64	146.86	26.35	1,634.24	1,807.45	115.19		38
39	Lee (Donnellson)	5	800	251.76	521.00	75.00	847.76	55.66	320.00	266.38	642.04	205.72		39
40	Linn (Walker)	8	800	17.96	175.06	75.00	268.02	34.49	49.00	78.81	162.30	105.72		40
41	Lyon (Inwood)	8	1,300	134.96	199.00	75.00	408.96	95.00	10.00	124.39	229.39	179.57		41
42	Mahaska (Oskaloosa)	5	2,000	376.55	148.65	75.00	600.20		149.50	54.45	203.95	396.25		42
43	Marshall (Clemons)	9	1,000		65.00	75.00	140.00	15.00	100.00	36.00	151.00		11.00	43
44	Mills (Glenwood)	8	650		11.00	74.86	85.86	17.30	11.00	46.56	74.86	11.00		44
45	Mitchell (Stacyville)	4	950		55.49	75.00	130.49	89.74	12.00	28.75	130.49			45
46	Montgomery (Grant)	6	900	15.20	138.93	37.50	191.63	40.28	88.30	15.00	143.58	48.05		46
47	Montgomery (Stanton)	3	225	30.40	116.85	37.50	184.75	36.60	41.00	23.15	100.75	84.00		47
48	Muscatine (Durant)	4	2,000	331.73	507.75	37.50	876.98	60.41	120.25	176.35	357.01	519.97		48
49	Muscatine (Sweetland)	5	600	17.19	275.75	37.50	330.44	19.95	35.05	131.90	186.90	143.54		49
50	Page (Clarinda)	5	2,500	72.71	741.43	75.00	889.14	89.25	334.00	252.71	675.96	213.18		50
51	Pocahontas (Plover)	11	1,000	231.19	414.65	75.00	720.84	85.21	28.82	136.61	250.64	470.20		51
52	Polk (Altoona)	5	1,500	40.67	429.09	37.50	507.26	28.25	335.35	47.95	411.55	95.71		52
53	Polk (Mitchellville)	6	700	1.67	779.27	37.50	818.44	15.76	358.50	41.90	416.16	402.28		53
54	Poweshiek (Brooklyn)	8	5,000	212.22	645.35	37.50	895.07	44.38	362.00	227.08	633.96	261.11		54
55	Poweshiek (Searsboro)	4	350	.70	96.56	37.50	134.76	31.55	71.21	25.00	127.76	7.00		55
56	Ringgold (Diagonal)	6	1,200	4.51	238.45	75.00	317.96	22.97	182.80	98.76	304.53	13.43		56
57	Scott (Eldridge)	8	1,450	138.13	312.75	37.50	488.38	61.94	92.00	119.89	273.83	214.55		57
58	Scott (Princeton)	8	850	76.13	299.19	37.50	412.82	79.34	116.36	24.90	220.60	192.22		58
59	Shelby (Harlan)	2	675	148.01	268.00	75.00	491.01	19.29	190.75	97.05	307.09	183.92		59
60	Sioux (Ireton)	7	700	136.28	157.80	75.00	369.08	43.00	109.50	63.18	215.68	153.40		60
61	Story (Roland)	6	850	151.88	48.00	75.00	274.88	39.94	47.75	38.79	126.48	148.40		61

62	Tama (Berlin and Traer)	4	900	30.01	89.25	75.00	194.26	44.40	89.25	29.85	163.50	30.76	......	62
65	Van Buren (Douds, Birmingham, Stockport, Bonapart, Mt. Sterling)	12	10,000	......	......	75.00	75.00	14.48	35.00	26.65	76.13	......	1.13	63
64	Webster (Fort Dodge)	7	1,600	......	495.82	37.50	533.32	20.72	363.82	129.91	514.45	18.87	......	64
65	Webster (Harcourt)	15	1,800	290.09	351.53	37.50	679.12	20.40	217.49	91.78	329.67	349.45	......	65
66	Winnebago (Thompson)	14	500	345.52	866.82	75.00	1,287.34	203.63	421.40	119.74	744.77	542.57	......	66
67	Woodbury (Sloan)	5	375	......	113.00	75.00	188.00	44.03	64.25	6.35	114.63	73.37	......	67
68	Worth (Manly and Northwood)	8	700	92.12	......	75.00	167.12	65.16	......	9.84	75.00	92.12	......	68
69	Wright (Dows and Goldfield)	11	450	......	40.00	75.00	115.00	32.75	21.00	53.50	107.25	7.75	......	69
	Total	451	94,425	$5,553.57	$16,570.70	$4,132.01	$26,256.28	$2,811.42	$8,487.65	$6,518.66	$17,817.73	$8,517.41	$78.86	

FINANCIAL STATEMENT OF SHORT COURSE ASSOCIATIONS OF IOWA FOR FISCAL YEAR, JULY 1, 1917 TO JUNE 30, 1918.

Louisa (Columbus City)	10	1,020	49.64	285.84	75.00	410.48	74.48	231.00	55.00	360.48	50.00	......
Polk (Des Moines)	14	50,000	......	2,927.00	200.00	3,127.00	47.78	793.20	2,145.99	2,986.97	140.03	......
Total	24	51,020	$ 49.64	$3,212.84	$275.00	$3,537.48	$ 122.26	$1,024.20	$2,200.99	$3,347.45	190.03	......

COUNTY AND DISTRICT FAIRS, 1918

During the season of 1918 eighty-nine county and district fairs were held in the State of Iowa, or four less than in 1917.

As a general proposition the fairs showed a slight falling off in attendance, receipts, number of exhibitors, number head of live stock and other exhibits in the various departments. The fairs, however, made a most creditable showing considering the fact that about 100,000 Iowa men are in the service of their country and the shortage of help on the farms reduced the attendance and made it difficult for the farmers to fit and show their stock and prepare other exhibits for the fairs.

The total attendance of the eighty-nine fairs was 1,150,461, paid admissions 910,349. This was a reduction of 194,798 in attendance and 184,619 paid admissions.

The total receipts of the eighty-nine fairs was $689,469.02 or $73,738.67 less than 1917 receipts. The expense of the fairs naturally increased this year. The total expense was $651,942.72 or $303.91 more than the cost of the ninety-three fairs in 1917. This year forty-nine fairs showed a profit of $65,493.09 and forty a loss of $27,966.79.

The net profit of the eighty-nine fairs was $37,526.30 compared with a net profit of $111,568.88 for the ninety-three fairs in 1917.

The state aid amounted to $51,048.36 or $3,768.88 less than in 1917.

The county fair reports filed with the department show that seventy-eight held race meetings and paid out $144,996 in speed premiums. The entry fees collected amounted to $42,715, leaving the net cost of the racing programs at the seventy-eight meetings $102,281 or an average cost of $1,311 each.

Estimating an average of thirty or thirty-five horses at each meeting the horsemen would receive, providing the money was equally divided, about $40 for each horse in their stables. Information secured from the horsemen shows that it cost on an average of $60 a week to campaign a horse at the county fairs. From these deductions, which are based on averages, it is readily seen that racing horses is not a very profitable business; in fact the owners are putting up about half as much as the fairs for the privilege of racing their horses.

The question is, how long will the owners continue on this basis and how long will the love of the race horse and the sport keep a sufficient number of horsemen interested in the game to furnish horses for the meetings.

Judging from the records of the Iowa Stallion Registration Division the interest in the Standardbred horse, from the breeder's standpoint, is very much on the wane. In 1912 the department enrolled 689 Standardbred stallions and in 1918 this number was reduced to 98. In 1913 the horsemen made 207 nominations in the No. 1 Iowa State Fair Futurity; in 1918 they made 65 nominations in the No. 6 Futurity.

The cost of music and attractions for the eighty-nine county and district fairs this year was $214,838, or an average of $2,414 each. It would be a difficult matter to make a great many people, especially anyone who is at all interested in horses, believe that the races are not at least half the amusement program at most of the county fairs, and yet, the other attractions cost almost double the amount. In my judgment the time is not far distant when the fairs that have races as a part of the program will be obliged to pay just what the races are worth as an attraction. I believe, however, that the fair managers are farsighted enough to cope with the situation and will not let the matter drift along until the whole industry is absorbed by the attraction people and the fairs will then be obliged to book horses through some booking agent, the same as we do other attractions, and make hippodrome affairs of the speed events.

TABLE NO. 1—FINANCIAL STATEMENT OF COUNTY

Number	County and City or Town	Balance on hand	Receipts		
			Receipts of fair	Receipts from sources other than fair	Total receipts
1	Adair, Greenfield	$ 736.02	$ 5,137.42	$	$ 5,873.44
2	Adams, Corning	334.68	4,737.96	66.45	5,139.09
3	Allamakee, Waukon		5,723.50		5,723.50
4	Audubon, Audubon	618.06	7,520.61	150.00	8,288.67
5	Benton, Vinton	222.43	4,301.09	4,840.00	9,363.52
6	Black Hawk, Cedar Falls	547.76	15,609.94	4,316.74	20,474.44
7	Black Hawk, Waterloo	1,770.43	26,091.30	692.50	28,554.23
8	Boone, Ogden	28.48	2,658.65	960.70	3,647.83
9	Bremer, Waverly	87.91	10,683.63	2,100.00	12,871.54
10	Buchanan, Aurora	68.92	1,611.48		1,680.40
11	Buchanan, Jesup		2,717.72	940.00	3,657.72
12	Buena Vista, Alta	1,030.46	9,534.83	500.00	11,065.29
13	Butler, Allison	1,425.13	4,114.34		5,539.47
14	Calhoun, Manson	1,062.48	6,128.47	55.00	7,245.95
15	Calhoun, Rockwell City	491.47	7,228.59	700.00	8,420.06
16	Carroll, Carroll	970.62	3,713.14		4,683.76
17	Cass, Atlantic	3,093.62	12,768.82	4,000.00	19,862.44
18	Cass, Massena	1,127.93	3,217.86		4,345.79
19	Cedar, Tipton	1,000.00	5,533.11	180.60	6,713.71
20	Cerro Gordo, Mason City		12,958.60		12,958.60
21	Clay, Spencer		15,464.99	44,125.00	59,589.99
22	Clayton, Elkader		5,108.03		5,108.03
23	Clayton, National	95.23	2,274.62		2,369.85
24	Clayton, Strawberry Point	314.11	3,521.80		3,835.91
25	Clinton, DeWitt	156.84	10,664.39	1,000.00	11,821.23
26	Crawford, Arion	507.80	3,342.43		3,850.23
27	Davis, Bloomfield	2,896.21	7,900.33	1,600.00	12,396.54
28	Delaware, Manchester	23.56	8,579.65	300.00	8,903.21
29	Des Moines, Burlington	4,069.19	24,224.38		28,293.57
30	Dickinson, Spirit Lake		3,401.50		3,401.50
31	Fayette, West Union	4,644.15	9,870.28		14,514.43
32	Greene, Jefferson	2,379.93	6,745.23		9,125.16
33	Grundy, Grundy Center		4,532.35		4,532.35
34	Guthrie, Guthrie Center	146.18	5,463.15	1,027.23	6,636.56
35	Hancock, Britt		2,988.85		2,988.85
36	Hamilton, Webster City		2,267.89		2,267.89
37	Hardin, Eldora		7,433.60		7,433.60
38	Harrison, Missouri Valley	1,891.21	6,488.88		8,380.09
39	Henry, Mt. Pleasant	174.96	19,374.91		19,549.87
40	Henry, Winfield	5.94	3,543.88		3,549.82
41	Humboldt, Humboldt		6,663.55	200.00	6,863.55
42	Iowa, Williamsburg		3,867.28	25.00	3,892.28
43	Jackson, Maquoketa	195.35	7,578.82	2,180.00	9,954.17
44	Jasper, Newton	102.23	8,629.11		8,731.34
45	Jefferson, Fairfield		836.12	1,020.00	1,856.12
46	Jones, Monticello	247.04	6,205.70		6,452.74
47	Keokuk, What Cheer	3,429.22	6,079.40		9,508.62
48	Kossuth, Algona	290.55	11,563.66	900.00	12,754.21
49	Lee, Donnellson		2,534.31	1,089.38	3,623.69
50	Lee, West Point		2,679.72		2,679.72
51	Linn, Central City		6,052.73	400.00	6,452.73
52	Linn, Marion	85.18	6,944.16		7,029.34
53	Louisa, Columbus Junction	1,008.68	8,163.90		9,172.58
54	Lucas, Derby	601.32	1,735.35	2,139.50	4,476.17
55	Lyon, Rock Rapids	4,670.27	13,127.92		17,798.19
56	Mahaska, New Sharon	30.86	2,246.42	2,339.83	4,617.11

AND DISTRICT FAIRS RECEIVING STATE AID IN 1918

Disbursements				Balance or Overdraft		Assets and Liabilities		
Expense of fair	Indebtedness of previous years paid	Improvements 1918	Total disbursements	Balance Nov. 1, 1918	Overdraft Nov. 1, 1918	Value of grounds and buildings	Present indebtedness	Number
$ 5,603.35	$	$ 600.00	$ 6,203.35	$	$ 329.91	$ 14,000.00	$ 1,000.00	1
4,517.20	422.33	250.46	5,189.99		50.90	5,000.00	700.00	2
4,734.72		300.00	5,034.72	688.78		10,000.00		3
6,956.36		1,186.00	8,142.36	146.31		10,000.00		4
6,971.15		2,208.24	9,179.39	184.13		11,500.00	5,200.00	5
14,997.06	2,772.42		17,769.48	2,704.96		66,361.77	39,050.00	6
21,631.42	937.62	2,113.45	24,682.49	3,871.74		56,000.00	13,000.00	7
2,680.99		438.24	3,119.23	528.60		13,000.00	8,401.88	8
11,599.01	228.76	756.00	12,583.77	287.77		22,899.64	4,200.00	9
1,272.80			1,272.80	407.60		1,000.00		10
2,304.64			2,304.64	1,353.08		125,000.00		11
8,676.28	998.00	1,200.00	10,874.28	191.01		15,000.00	1,500.00	12
4,523.41	730.00	150.00	5,403.41	136.06		10,000.00		13
6,322.82			6,322.82	923.13		10,000.00	1,400.00	14
7,573.37		317.12	7,890.49	529.57		9,500.00	3,200.00	15
4,021.57	755.54	126.80	4,903.91		220.15	12,500.00	5,000.00	16
10,014.08		7,892.40	17,906.48	1,955.96		35,000.00	4,000.00	17
2,916.87	641.38	153.28	3,711.53	634.26		10,000.00		18
6,120.13		500.00	6,620.13	93.58		16,000.00		19
15,062.31	850.00	619.35	16,531.66		3,573.06	100,000.00		20
13,850.75		40,207.38	54,058.13	5,531.86		55,000.00	6,000.00	21
4,554.92		351.72	4,906.64	201.39		10,000.00	5,700.00	22
2,366.46			2,366.46	3.39		5,000.00	3,000.00	23
3,265.00	330.00	75.00	3,670.00	165.91		8,000.00	4,100.00	24
9,280.13	1,070.20	518.33	10,868.66	952.57		10,000.00	1,000.00	25
3,832.23			3,832.23	18.00		3,000.00		26
6,102.69		6,241.00	12,343.69	52.85		22,000.00	1,600.00	27
6,413.08	75.00	319.42	6,807.50	2,095.71		25,000.00		28
23,411.49	6,269.19	1,114.04	30,794.72		2,501.15	90,000.00	40,220.00	29
5,305.37		250.00	5,555.37		2,153.87	15,000.00	5,700.00	30
8,053.80		1,360.52	9,414.32	5,100.11		22,900.00		31
5,341.50		748.55	6,090.05	3,035.11		20,000.00	5,000.00	32
4,415.50		800.00	5,215.50		683.15	12,000.00	300.00	33
5,661.61		800.00	6,461.61	174.95		18,000.00	800.00	34
3,811.50			3,811.50		822.65	15,000.00	3,500.00	35
2,198.78			2,198.78	69.11				36
6,630.25			6,630.25	83.35		12,000.00	3,000.00	37
5,385.17	253.20	1,275.75	6,914.12	1,465.97		15,000.00		38
16,172.76	700.00	1,342.10	18,214.86	1,335.01		26,000.00	3,000.00	39
4,772.45	482.00		5,254.45		1,704.63	14,000.00	4,666.00	40
6,473.00		200.00	6,673.00	190.55		25,500.00	10,000.00	41
5,838.48		971.26	6,809.74		2,917.46	10,000.00	3,400.00	42
8,596.41	180.00	500.00	9,276.41	677.76		12,000.00	3,000.00	43
7,652.60		1,058.05	8,710.65	20.69		30,000.00	1,500.00	44
1,657.91		401.65	2,059.56		203.44	12,000.00		45
5,950.28		800.00	6,750.28		297.54	22,000.00		46
5,756.72		357.25	6,113.97	3,394.65		10,000.00		47
11,668.93	400.00	500.00	12,568.93	185.28		35,000.00	2,500.00	48
2,703.19		28.96	2,732.15	891.54		2,000.00	857.23	49
2,661.53			2,661.53	18.19		8,000.00	5,830.00	50
5,647.13			5,647.13	805.60		10,000.00	2,400.00	51
6,958.40		400.00	7,358.40		329.06	12,000.00	6,600.00	52
7,311.87	625.27	372.00	8,309.14	863.44		14,000.00	4,900.00	53
1,580.58	920.00	1,849.50	4,350.08	126.09		4,779.50	3,070.00	54
11,652.98		3,103.40	14,756.38	3,041.81		25,000.00		55
2,815.47	1,089.83	254.41	4,159.71	457.40		11,000.00	2,339.83	56

TABLE No.

Number	County and City or Town	Balance on hand	Receipts		
			Receipts of fair	Receipts from sources other than fair	Total receipts
57	Mahaska, Oskaloosa	1,382.39	21,946.56	3,800.00	27,128.95
58	Marion, Knoxville		13,676.83		13,676.83
59	Marion, Pella		2,983.28		2,983.28
60	Marshall, Marshalltown	2,396.34	13,360.45	1,500.00	17,256.79
61	Mills, Malvern	2,159.87	11,266.48	500.00	13,926.35
62	Mitchell, Osage	313.90	2,951.70	118.00	3,383.60
63	Monona, Onawa		3,097.45	444.88	3,542.33
64	Monroe, Albia	2,474.83	7,464.94	40.00	9,979.77
65	Muscatine, West Liberty	5,280.61	13,546.35		18,826.96
66	O'Brien, Sheldon	44.05	9,300.00	100.00	9,444.05
67	O'Brien, Sutherland	2,448.84	4,258.25		6,707.09
68	Page, Clarinda	2,366.17	11,135.83	1,000.00	14,502.00
69	Page, Shenandoah	711.89	10,044.99	6,281.65	17,038.53
70	Pocahontas, Fonda	1,550.85	5,626.20		7,177.05
71	Pottawattamie, Avoca	24.50	4,619.61	270.65	4,914.76
72	Poweshiek, Grinnell		6,502.45		6,502.45
73	Poweshiek, Malcom	22.21	2,612.32		2,634.53
74	Sac, Sac City	1,171.10	10,166.63	8,150.00	19,487.73
75	Shelby, Harlan	4,408.00	10,513.29	355.00	15,276.29
76	Sioux, Orange City	21.82	3,202.74	4,905.00	8,129.56
77	Story, Ames	321.95	3,086.80		3,408.75
78	Tama, Toledo		6,383.18		6,383.18
79	Taylor, Bedford	997.39	8,221.10		9,218.49
80	Union, Creston		60.00	400.00	460.00
81	Van Buren, Milton		3,185.39		3,185.39
82	Wapello, Agency	127.02	1,710.00	1,912.00	3,749.02
83	Warren, Indianola	639.28	6,988.44		7,627.72
84	Wayne, Corydon	368.81	12,975.07	2,200.00	15,543.88
85	Winnebago, Forest City	86.21	3,139.84	1,600.00	4,826.05
86	Winneshiek, Decerah		7,237.32	420.15	7,657.47
87	Woodbury, Sioux City		61,047.08		61,047.08
88	Worth, Northwood	1,110.36	1,784.10		2,894.46
89	Wright, Clarion		5,284.00	388.34	5,672.34
89	Totals 1918	$ 73,010.80	$689,469.02	$112,233.60	$874.713.42
93	Totals 1917	$ 51,620.20	$763,207.69	$182,706.77	$942,717.42
99	Totals 1916	$ 48,355.73	$703,344.41	$194,738.86	$889,568.33
93	Totals 1915	$ 36,480.71	$564,935.64	$188,684.12	$742,014.00

1—Continued.

Disbursements				Balance or Overdraft		Assets and Liabilities		
Expense of fair	Indebtedness of previous years paid	Improvements 1918	Total disbursements	Balance Nov. 1, 1918	Overdraft Nov. 1, 1918	Value of grounds and buildings	Present indebtedness	Number
21,536.00		4,129.21	25,665.21	1,463.74		70,000.00	6,400.00	57
11,582.48			11,582.48	2,094.35		39,143.00	14,800.00	58
3,311.72	359.43		3,671.15		687.87	10,000.00	3,900.00	59
15,171.01		2,075.35	17,246.36	10.43		32,500.00	1,500.00	60
9,297.11	2,578.71	500.00	12,375.82	1,550.53		15,000.00	10,000.00	61
3,291.54			3,291.54	92.06		6,000.00	2,500.00	62
3,175.15	127.55	42.45	3,345.15	197.18		10,500.00	4,000.00	63
7,351.09	450.00	885.00	8,686.09	1,293.68		5,500.00		64
10,779.01		3,848.18	14,627.1	4,199.77				65
9,868.87	300.00		10,168.8		724.82	20,000.00		66
3,604.15	1,967.00	615.00	6,186.1	520.94		9,000.00	1,500.00	67
12,275.78	503.00	1,001.94	13,780.7	721.28		7,619.95		68
9,467.29	4,865.30	2,182.29	16,514.8	523.65		18,000.00	5,595.80	69
6,195.78		300.00	6,495.7	681.27		12,000.00		70
3,996.45			3,996.4	918.31		7,500.00	1,600.00	71
6,951.69	100.40	488.04	7,540.1		1,037.68	18,000.00		72
3,003.50			3,003.5		368.97	8,500.00	2,300.00	73
10,603.23		8,330.33	18,933.5	554.17		24,000.00	8,150.00	74
8,492.99		3,668.00	12,160.9	3,115.30		30,000.00		75
3,182.78		4,847.71	8,030.4	99.07		20,000.00	1,600.00	76
2,262.19	490.36	337.03	3,089.5	319.17		4,500.00	3,500.00	77
7,522.44		100.00	7,622.4		1,239.26	25,000.00	12,000.00	78
6,902.88		119.16	7,022.0	2,196.45		7,000.00		79
450.00			450.0	10.00				80
3,110.00			3,110.0	75.39		7,000.00	4,250.00	81
2,410.25			2,410.2	1,338.77		9,000.00		82
7,406.15			7,406.1	221.57		25,000.00		83
11,925.83	1,954.00	1,651.28	15,531.1	12.77		22,500.00	4,800.00	84
4,577.72		48.10	4,625.8	200.23		15,000.00	5,750.00	85
7,093.62		561.53	7,655.1	2.32		15,000.00	5,500.00	86
43,480.01	2,162.53	985.91	46,628.4	14,418.63		200,000.00		87
2,023.11		113.05	2,136.1	758.30		6,000.00		88
5,390.44	172.20	109.70	5,672.34			13,000.00	6,000.00	89
$ 651,942.72	$ 36,761.22	$121,950.89	$810,654.8	$ 83,904.16	$ 19,845.57	$ 1,906,203.86	$326,280.74	89
$ 651,638.81	$ 85,592.90	$ 96,464.95	$833,696.66	$ 114,718.13	$ 5,697.37	$ 1,629,082.99	$320,743.84	93
$ 626,870.14	$ 71,687.90	$138,269.99	$836,828.93	$ 74,341.91	$ 21,601.61	$ 1,588,885.00	$261,155.40	99
$ 521,599.90	$ 39,156.93	$102,102.92	$688,291.21	$ 63,491.98	$ 9,769.19	$ 988,128.44	$267,299.26	93

TABLE NO. 2—RECEIPTS AND DISBURSEMENTS

Number	County and City or Town	Receipts				
		Ticket Sales				
		Outside gates	Grand stand	Entry fees speed department	Concessions and privileges	Miscellaneous receipts of fair
1	Adair, Greenfield	3,492.70	$ 245.35	$ 475.00	$ 197.00	$ 79.70
2	Adams, Corning	2,692.36	151.50	819.35	493.05	210.85
3	Allamakee, Waukon	3,986.80	212.75	660.00	451.65	40.00
4	Audubon, Audubon	5,303.70	857.10	170.00	406.35	149.39
5	Benton, Vinton	2,890.15	340.05	280.00	303.27	46.77
6	Black Hawk, Cedar Falls	6,881.80	4,562.89	340.00	982.00	2,043.25
7	Black Hawk, Waterloo	14,586.25	861.80		1,414.35	8,428.90
8	Boone, Ogden	1,594.95	22.90		80.00	543.50
9	Bremer, Waverly	4,681.00	1,594.30		1,412.00	2,196.33
10	Buchanan, Aurora	734.10		82.15	70.00	431.80
11	Buchanan, Jesup	1,320.59			411.21	592.50
12	Buena Vista, Alta	5,590.60	583.25	660.00	713.50	1,296.03
13	Butler, Allison	2,348.98	280.80	80.00	358.00	622.00
14	Calhoun, Manson	4,370.20	284.20	79.00	582.00	111.50
15	Calhoun, Rockwell City	3,564.35	484.75	1,116.00	857.00	632.80
16	Carroll, Carroll	2,217.60	168.50	156.00	897.64	153.30
17	Cass, Atlantic	8,076.25	1,575.00		777.35	1,540.22
18	Cass, Massena	2,276.50	77.87	128.75	127.88	260.30
19	Cedar, Tipton	2,973.80	854.50	317.50	304.50	363.92
20	Cerro Gordo, Mason City	5,036.35	1,870.95	680.00	1,908.10	2,663.20
21	Clay, Spencer	8.652.52	3,564.70	903.00	937.00	612.94
22	Clayton, Elkader	3,181.95	420.00	300.00	274.70	302.00
23	Clayton, National	1,126.50	50.55		110.00	482.67
24	Clayton, Strawberry Point	1.780.20	500.95		222.00	631.65
25	Clinton, DeWitt	5.847.10	1,399.70	490.00	493.00	1,660.60
26	Crawford, Arion	2,097.79	133.75	277.50	202.50	122.77
27	Davis, Bloomfield	3.833.35	1,210.70	897.50	499.50	758.48
28	Delaware, Manchester	4,658.67	956.25		1,050.10	1,218.38
29	Des Moines, Burlington	10,557.06	5,360.00	3,265.25	3,148.00	1,094.07
30	Dickinson, Spirit Lake	2,292.85	148.75		195.00	178.01
31	Fayette, West Union	6,091.35	895.50	606.75	1,082.15	501.23
32	Greene, Jefferson	4,543.25	574.25		347.50	737.50
33	Grundy, Grundy Center	2,975.85	155.40	335.00	316.00	193.00
34	Guthrie, Guthrie Center	3,535.62		193.50	1,090.00	
35	Hancock, Britt	2,157.13	167.00		359.02	
36	Hamilton, Webster City	898.00			107.00	933.55
37	Hardin, Eldora	4,403.00	462.55	920.00	991.00	7.00
38	Harrison, Missouri Valley	4,232.45	748.75	45.00	473.49	329.10
39	Henry, Mt. Pleasant	7,243.05	2,181.75	2,789.00	1,873.45	4,487.66
40	Henry, Winfield	1,739.40	332.15	300.00	407.13	256.55
41	Humboldt, Humboldt	3,388.70	920.25	640.00	839.00	100.00
42	Iowa, Williamsburg	2,446.25	215.40	52.50	303.00	363.75
43	Jackson, Maquoketa	4,307.70	722.50	940.00	168.62	827.36
44	Jasper, Newton	4,469.25	1,711.25	270.00	491.75	1,077.05
45	Jefferson, Fairfield	127.50				192.32
46	Jones, Monticello	3,575.90	991.85	150.00	500.00	519.80
47	Keokuk, What Cheer	3.182.35	404.75	1,055.00	354.80	337.00
48	Kossuth, Algona	7,466.93	808.65	450.00	1,207.70	830.38
49	Lee, Donnellson	1,503.75		381.00	142.75	128.15
50	Lee, West Point	1,311.75		144.00	104.00	769.84
51	Linn, Central City	2,769.80	1,140.10		853.78	673.85
52	Linn, Marion	2,809.65	575.00		873.70	1,995.42
53	Louisa, Columbus Junction	4,625.25	1,396.25	452.50	537.05	453.00
54	Lucas, Derby	753.76			64.00	315.50
55	Lyon, Rock Rapids	7,016.50	1,683.70	1,311.60	1,170.00	1,259.37
56	Mahaska, New Sharon	1,093.87	375.50	75.00	109.45	236.50

OF COUNTY AND DISTRICT FAIRS IN IOWA IN 1918.

Receipts		Disbursements							
State aid	Total receipts of fair	Premiums other than for speed	Speed premiums	Music and attractions	Miscellaneous expense of fair	Total disbursements	(+) Profit ( ) Loss		Number
$ 647.67	$ 5,137.42	$ 1,238.35	$ 1,455.00	$ 1.410.00	$ 1,500.00	$ 5,603.35	$ 465.93	—	1
370.85	4,737.96	618.09	1,756.75	750.00	1,392.36	4,517.20	220.76	+	2
372.30	5,723.50	620.50	1,620.00	575.00	1,919.22	4,734.72	988.78	+	3
634.07	7,520.61	1,170.35	2,083.50	1,838.10	1,864.41	6,956.36	564.25	+	4
440.85	4,301.09	734.75	990.00	2,572.50	2,673.90	6,971.15	2,670.06	—	5
800.00	15,609.94	2,044.40	2,195.00	7,441.43	3,316.23	14,997.06	612.88	+	6
800.00	26,091.30	4,961.00	......	4,387.00	12,283.42	21,631.42	4,459.88	+	7
417.30	2,658.65	695.50	98.00	1,395.00	492.49	2,680.99	22.34	—	8
800.00	10,683.63	2,567.53	1,308.00	2,623.68	5,099.80	11,599.01	915.38	—	9
293.43	1,611.48	489.05	135.70	220.00	428.05	1,272.80	338.68	+	10
393.42	2,717.72	655.70	20.00	520.60	1,108.34	2,304.64	413.08	+	11
691.45	9,534.83	1,457.25	2,263.95	2,454.85	2,500.23	8,676.28	858.55	+	12
424.56	4,114.34	707.60	300.00	1,915.00	1,600.81	4,523.41	409.07	—	13
701.57	6,128.47	1,507.85	692.50	2,477.50	1,644.97	6,322.82	194.35	—	14
573.69	7,228.59	956.15	2,859.00	1,928.44	1,829.78	7,573.37	344.78	—	15
120.10	3,713.14	200.18	1,321.50	726.15	1,773.74	4,021.57	308.43	—	16
800.00	12,768.82	2,333.25	2,179.84	2,407.85	3,093.14	10,014.08	2,754.74	+	17
346.56	3,217.86	577.60	1,297.75	775.00	266.52	2,916.87	300.99	+	18
718.89	5,533.11	1,594.45	1,920.00	1,200.00	1,405.68	6,120.13	587.02	—	19
800.00	12,958.60	3,153.45	1,600.00	3,803.50	6,505.36	15,062.31	2,103.71	—	20
794.83	15,464.99	1,974.15	2,492.50	2,966.60	6,417.50	13,850.75	1,614.24	+	21
629.38	5,108.03	1,146.90	750.00	2,048.40	609.62	4,554.92	553.11	+	22
504.90	2,274.62	841.50	50.00	443.60	1,031.36	2,366.46	91.84	—	23
387.00	3,521.80	645.00	195.00	1,540.00	885.00	3,265.00	256.80	+	24
773.99	10,664.39	1,869.95	2,265.75	750.00	4,394.43	9,280.13	1,384.26	+	25
508.12	3,342.43	846.87	1,000.00	1.035.00	950.36	3,832.23	489.80	—	26
700.80	7,900.33	1,504.00	2,292.50	300.00	2,006.19	6,102.69	1,797.64	+	27
696.25	8,579.65	1,481.25	464.00	2,839.00	1,628.83	6,413.08	2,166.57	+	28
800.00	24,224.38	8,138.84	7,025.00	2,607.50	5,640.15	23,411.49	812.89	+	29
586.89	3,401.50	978.15	......	2,553.00	1.774.22	5,305.37	1,903.87	—	30
693.30	9,870.28	1,466.50	1,420.00	2,888.75	2,278.55	8,053.80	1,816.48	+	31
542.73	6,745.23	904.55	747.50	1,457.00	2,232.45	5,341.50	1,403.73	+	32
557.10	4,532.35	928.50	1,473.25	760.00	1,253.75	4,415.50	116.85	+	33
644.03	5,463.15	1,220.18	1,868.85	913.30	1,659.28	5,661.61	198.46	—	34
305.70	2,988.85	509.50	1,000.00	625.00	1,677.00	3,811.50	822.65	—	35
329.34	2,267.89	548.90	......	......	1,649.88	2,198.78	69.11	+	36
650.05	7,433.60	1,250.25	2,580.00	1,350.00	1,450.00	6,630.25	803.35	+	37
660.09	6,488.88	1,300.45	438.75	1,373.00	2,272.97	5,385.17	1,103.71	+	38
800.00	19,374.91	3,516.00	4,700.00	3,116.00	4,840.76	16,172.76	3,202.15	+	39
508.65	3,543.88	847.75	1,972.50	775.00	1,177.20	4,772.45	1,228.57	—	40
775.60	6,663.55	1,878.00	1,880.00	1,915.00	800.00	6,473.00	190.55	+	41
486.38	3,867.28	810.63	1,207.50	2,300.00	1,520.35	5,838.48	1,971.20	—	42
612.64	7,578.82	1,063.19	1,700.00	1,165.00	4,668.22	8,596.41	1,017.59	—	43
609.81	8,629.11	1,049.08	1,996.50	2,058.96	2,548.06	7,652.60	976.51	+	44
516.30	836.12	860.50	......	......	797.41	1,657.91	821.79	—	45
468.15	6,205.70	780.25	600.00	2,765.00	1,805.03	5,950.28	255.42	+	46
745.50	6,079.40	1,727.50	2,300.00	1,150.00	579.22	5,756.72	322.68	+	47
800.00	11,563.66	2,119.85	2,312.75	2,500.00	4,736.33	11,668.93	105.27	—	48
378.66	2,534.31	631.10	1,120.00	292.00	660.09	2,703.19	169.06	—	49
350.13	2,679.72	583.55	841.50	100.00	1,136.48	2,661.53	18.19	+	50
615.20	6,052.73	1,076.00	118.00	2,258.25	2,194.88	5,647.13	405.60	+	51
690.29	6,944.16	1,451.95	1,283.17	1,735.00	2,488.28	6,958.40	14.24	—	52
699.85	8,163.90	1,499.25	1,777.50	1,822.50	2,212.62	7,311.87	852.03	+	53
602.09	1,735.35	1,010.45	......	227.99	342.14	1,580.58	154.77	+	54
686.75	13,127.92	1,433.75	3,556.60	2,310.00	4,352.63	11,652.98	1,474.94	+	55
356.10	2,246.42	593.50	885.00	559.89	777.08	2,815.47	569.05	—	56

TABLE No.

Number	County and City or Town	Receipts				
		Ticket Sales				
		Outside gates	Grand stand	Entry fees speed department	Concessions and privileges	Miscellaneous receipts of fair
57	Mahaska, Oskaloosa	12,797.00	3,779.20	869.25	1,508.10	2,193.01
58	Marion, Knoxville	6,259.90	2,083.55	2,205.50	1,223.40	1,104.48
59	Marion, Pella	1,605.15	187.90	105.00	94.75	344.05
60	Marshall, Marshalltown	8,103.50	1,568.40	665.00	1,836.55	387.00
61	Mills, Malvern	7,138.63	1,200.00	832.00	805.00	620.04
62	Mitchell, Osage	1,921.65	217.80		220.50	118.50
63	Monona, Onawa	1,742.75	388.90	87.30	235.25	279.50
64	Monroe, Albia	3,871.20	604.16	775.00	612.54	883.64
65	Muscatine, West Liberty	8,320.00	1,313.00	1,162.50	854.17	1,096.68
66	O'Brien, Sheldon	5,392.90	542.10	1,140.00	690.75	918.99
67	O'Brien, Sutherland	3,189.75	172.50		280.35	261.50
68	Page, Clarinda	7,280.76	1,008.70	374.00	741.32	1,086.15
69	Page, Shenandoah	5,878.75	242.35	662.50	668.30	1,969.93
70	Pocahontas, Fonda	2,000.00	250.00	1,540.00	700.00	865.00
71	Pottawattamie, Avoca	2,571.50	599.50	22.50	750.50	202.45
72	Poweshiek, Grinnell	3,461.00	876.50	654.75	723.20	282.55
73	Poweshiek, Malcom	883.15	246.00	255.00	331.00	531.98
74	Sac, Sac City	4,719.07	928.15	1,922.45	1,247.50	729.16
75	Shelby, Harlan	5,642.90	1,120.00	139.50	1,314.00	1,628.67
76	Sioux, Orange City	2,002.30	199.30		235.55	425.00
77	Story, Ames	2,166.00			119.50	289.50
78	Tama, Toledo	3,879.75	395.00	232.50	540.30	660.07
79	Taylor, Bedford	5,598.50	275.75	947.00	639.02	547.20
80	Union, Creston					
81	Van Buren, Milton	1,622.90	170.74	440.10	208.45	38.00
82	Wapello, Agency	796.60			10.00	153.15
83	Warren, Indianola	3,061.94	850.95	384.00	648.20	1,385.30
84	Wayne, Corydon	8,759.30	1,331.00	992.00	738.25	354.52
85	Winnebago, Forest City	2,083.75	395.55		97.75	41.00
86	Winneshiek, Decorah	4,806.57	527.85	330.00	1,104.90	
87	Woodbury, Sioux City	34,081.50	7,610.75	1,609.60	10,014.93	6,930.30
88	Worth, Northwood	1,072.50	64.30		77.00	212.85
89	Wright, Clarion	2,921.25	379.75	1,120.00	503.00	
89	Totals 1918	$382,947.45	$74,766.01	$42,755.30	$64,419.02	$73,532.88
93	Totals 1917	$435,182.48	$87,948.12	$45,179.93	$80,282.03	$59,797.89
99	Totals 1916	$382,555.23	$77,470.19	$47,204.11	$71,984.26	$67,259.95
93	Totals 1915	$308,720.82	$56,650.00	$37,242.95	$58,592.11	$55,643.78

2—Continued.

Receipts		Disbursements					(+) Profit (—) Loss		Number
State aid	Total receipts of fair	Premiums other than for speed	Speed premiums	Music and attractions	Miscellaneous expense of fair	Total disbursements			
800.00	21,946.56	5,517.75	4,026.49	3,849.91	8,141.85	21,536.00	410.56	+	57
800.00	13,676.83	2,330.48	4,545.00	2,057.00	2,650.00	11,582.48	2,094.35	+	58
646.43	2,983.28	1,232.15	402.00	840.00	837.57	3,311.72	328.44	—	59
800.00	13,360.45	4,059.70	2,790.50	2,550.00	5,770.81	15,171.01	1,810.56	—	60
670.31	11,266.48	1,354.05	2,320.75	3,278.34	2,343.97	9,297.11	1,969.37	+	61
473.25	2,951.70	788.75	196.00	1,413.00	893.79	3,291.54	339.84	—	62
363.75	3,097.45	606.25	779.75	750.00	1,039.15	3,175.15	77.70	—	63
718.40	7,464.94	1,592.00	2,955.00	663.70	2,140.39	7,351.09	113.85	+	64
800.00	13,546.35	2,954.75	3,120.00	2,381.06	2,323.20	10,779.01	2,767.34	+	65
615.26	9,300.00	1,076.33	3,340.00	2,143.00	3,309.54	9,868.87	568.87	—	66
354.15	4,258.25	590.25	250.00	1,985.00	778.90	3,604.15	654.10	+	67
644.90	11,135.83	1,224.50	1,835.49	4,279.05	4,936.74	12,275.78	1,139.95	—	68
623.16	10,044.99	1,115.80	1,767.25	2,587.12	3,997.12	9,467.29	577.70	+	69
271.20	5,626.20	452.00	3,200.00	1,500.00	1,043.78	6,195.78	569.58	—	70
473.16	4,619.61	788.60	1,324.00	593.00	1,290.85	3,996.45	623.16	+	71
504.45	6,502.45	840.75	2,161.75	1,809.71	2,139.48	6,951.69	449.24	—	72
365.19	2,612.32	608.65	1,062.00	410.00	922.85	3,003.50	391.18	—	73
620.30	10,166.63	1,101.99	4,053.35	2,217.19	3,230.70	10,603.23	436.60	—	74
668.22	10,513.29	1,341.10	3,817.00	1,755.00	1,579.89	8,492.99	2,020.30	+	75
340.59	3,202.74	567.65	625.15	1,135.00	854.98	3,182.78	19.96	+	76
511.80	3,086.80	853.00		765.22	643.97	2,262.19	824.61	+	77
675.56	6,383.18	1,377.80	1,660.00	2,000.00	2,484.64	7,522.44	1,139.26	—	78
213.63	8,221.10	356.05	2,185.00	3,060.63	1,301.20	6,902.88	1,318.22	+	79
60.00	60.00	100.00			350.00	450.00	390.00	—	80
705.20	3,185.39	1,526.00	984.00		600.00	3,110.00	75.39	+	81
750.25	1,710.00	1,751.25		240.00	419.00	2,410.25	700.25	—	82
658.05	6,988.44	1,290.25	1,920.00	2,040.00	2,155.90	7,406.15	417.71	—	83
800.00	12,975.07	2,775.00	4,563.25	1,829.83	2,757.75	11,925.83	1,049.24	+	84
521.79	3,139.84	869.65	1,222.00	1,158.00	1,328.07	4,577.72	1,437.88	—	85
468.00	7,237.32	780.00	960.00	3,452.64	1,900.98	7,093.62	143.75	+	86
800.00	61,047.08	7,517.75	5,076.00	12,131.05	18,755.21	43,480.01	17,567.07	+	87
357.45	1,784.10	595.76	400.00	522.95	504.40	2,023.11	239.01	—	88
360.00	5,284.00	600.00	2,082.00	1,443.44	1,265.00	5,390.44	106.44	—	89
$51,048.36	$689,469.02	$129,306.75	$146,034.34	$161,763.18	$214,838.45	$651,942.72	$ 65,493.09 27,966.79	+ —	89
$54,817.24	$763,207.69	$137,226.48	$148,359.47	$159,441.51	$206,611.35	$651,638.81	$122,791.34 11,222.46	+ —	93
$56,870.67	$703,344.41	$144,703.25	$149,285.42	$151,242.79	$181,638.68	$626,870.14	$ 93,132.24 16,657.97	+ —	99
$48,085.98	$564,935.64	$117,439.10	$127,951.22	$115,227.34	$160,982.24	$521,599.90	$ 62,230.80 18,895.06	+ —	93

TABLE NO. 3—TOTAL NUMBER OF EXHIBITORS, NUMBER HORSES, CATTLE, SWINE, SHEEP AND POULTRY ON EXHIBITION

Number	County and City or Town	Number of exhibitors	Number of exhibitors live stock department	Horses		Cattle	
				No. exhibited	Premiums paid	No. exhibited	Premiums paid
1	Adair, Greenfield	180	32	21	$ 140.50	43	$ 253.50
2	Adams, Corning	67	21	11	38.70	27	121.95
3	Allamakee, Waukon	278	42	41	137.00	22	104.00
4	Audubon, Audubon	450	332	34	174.00	60	275.00
5	Benton, Vinton	58	20	32	221.00	17	157.00
6	Black Hawk, Cedar Falls	383	64	103	392.00	86	423.50
7	Black Hawk, Waterloo	490	51			523	4,461.00
8	Boone, Ogden	105	37	32	246.00	13	50.00
9	Bremer, Waverly	843	71	52	304.75	163	778.36
10	Buchanan, Aurora	282	32	17	71.00	30	73.00
11	Buchanan, Jesup	159	45	22	70.00	116	315.00
12	Buena Vista, Alta	112	50	18	103.00	57	329.00
13	Butler, Allison	500	23	25	141.00	26	93.50
14	Calhoun, Manson	179	32	48	229.50	87	340.40
15	Calhoun, Rockwell City	88	33	49	167.50	52	250.00
16	Carroll, Carroll	26	3			18	117.93
17	Cass, Atlantic	253	138	87	554.00	76	251.00
18	Cass, Massena	93	34	16	76.00	22	174.00
19	Cedar, Tipton	485	45	57	492.50	32	343.00
20	Cerro Gordo, Mason City	1,338	80	99	619.00	77	440.00
21	Clay, Spencer	250	46	39	297.00	110	658.00
22	Clayton, Elkader	119	38	31	181.50	55	295.00
23	Clayton, National	78	12	26	143.00	31	121.50
24	Clayton, Strawberry Point	174	19	23	95.25	4	11.50
25	Clinton, DeWitt	225	31	18	181.00	32	400.00
26	Crawford, Arion	96	38	14	185.62	5	62.50
27	Davis, Bloomfield	210	36	48	569.00	37	221.50
28	Delaware, Manchester	116	72	59	290.00	96	547.00
29	Des Moines, Burlington	645	71	249	4,227.64	115	1,015.70
30	Dickinson, Spirit Lake	214			111.00		96.00
31	Fayette, West Union	329	56	55	391.25	113	324.75
32	Greene, Jefferson	128	47	34	141.00	23	115.00
33	Grundy, Grundy Center	284	36	60	128.00	71	183.00
34	Guthrie, Guthrie Center		42	49	122.88	67	138.35
35	Hancock, Britt	62	22	16	68.00	34	138.00
36	Hamilton, Webster City	177	45	23	73.00	23	57.00
37	Hardin, Eldora		27	30	102.00	28	155.00
38	Harrison, Missouri Valley	162	54	67	267.00	85	401.60
39	Henry, Mt. Pleasant	343	57	81	748.00	116	880.00
40	Henry, Winfield	82	23	20	185.00	53	335.00
41	Humboldt, Humboldt	233	45	58	315.00	65	267.00
42	Iowa, Williamsburg	200		24	130.50	4	52.20
43	Jackson, Maquoketa	387	87	11	108.00	75	357.50
44	Jasper, Newton	114	25	11	51.30	82	180.22
45	Jefferson, Fairfield	94	56	99	258.00	92	302.00
46	Jones, Monticello	203	15	43	212.00	15	49.00
47	Keokuk, What Cheer	105	41	46	174.50	123	719.00
48	Kossuth, Algona	472	103	16	75.00	146	645.00
49	Lee, Donnellson	86	21	42	255.00	4	28.00
50	Lee, West Point	40	13	7	175.00		
51	Linn, Central City	170	70	50	184.00	75	355.00
52	Linn, Marion	204	73	19	113.00	69	562.00
53	Louisa, Columbus Junction	118	45	56	296.50	71	374.00
54	Lucas, Derby	208	95	79	194.50	50	144.50
55	Lyon, Rock Rapids	285	27	32	239.50	43	422.50

EXHIBITORS IN LIVE STOCK DEPARTMENT, NUMBER AND AMOUNT OF PREMIUMS PAID IN EACH DIVISION.

Swine		Sheep		Poultry		Premiums paid agricultural department	Premiums paid pantry and kitchen department	Premiums paid fine arts department	Premiums paid all other departments	Number
No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid					
144	$ 267.50	48	$ 66.00	123	$ 35.50	$ 136.10	$ 33.65	$ 131.85	$ 173.75	1
65	119.25	39	96.30	102	59.81	49.33	52.00	51.75	29.00	2
30	75.00			64	26.50	197.50	18.00	48.00	14.50	3
135	194.00			103	33.70	36.60	89.80	19.10	348.15	4
28	85.00	8	12.00	240	141.00	47.00	18.00	53.75		5
91	313.00	63	200.00	157	75.50	226.00	67.10	103.75	243.55	6
									500.00	7
26	79.00	10	39.00	85	51.50	46.50	49.90	98.60	35.00	8
210	247.49	154	186.75	180	82.75	104.00	69.25	85.75	708.43	9
66	88.00	17	12.50	57	65.50	70.50	37.00	71.55		10
43	67.00	26	36.00	76	45.50	46.75	9.00	51.95	14.50	11
298	650.00			66	22.50	29.00	63.25	30.00	230.50	12
60	66.50	5	8.00	110	64.10	84.60	81.70	10.25	157.95	13
150	241.00	7	13.00	250	62.75	92.25	27.20	279.65	222.10	14
52	158.00	34	63.00	124	130.30	81.00	31.30	33.30	41.75	15
16	28.00					20.00	34.25			16
573	684.50	62	113.00	382	127.50	169.75	132.75	258.00	42.75	17
51	134.00	58	105.00	50	9.50	79.10				18
102	161.50	31	129.00	254	135.75	116.00	73.75	18.95	124.00	19
374	604.00	182	446.00	146	65.75	252.25	124.15	168.40	433.90	20
232	388.00	29	107.00	250	135.40	189.95	135.80	43.00	20.00	21
122	215.00	25	80.00	107	30.00	142.65	81.00	102.75	19.00	22
40	112.50	17	60.00	10	4.50	74.25	73.30	146.00	106.45	23
30	100.00	20	33.00	36	16.50	90.00	70.00	135.00	93.75	24
115	318.00	28	73.00	22	20.00	109.50	98.00	287.00	383.45	25
12	168.00	1	30.00	30	17.25	159.60	46.45		177.45	26
48	165.00	46	140.00	117	64.25	109.50	60.75	124.75	49.25	27
53	250.00	16	45.50	43	42.75	109.00	147.00		50.00	28
158	560.00	88	339.00	1,697	556.75	476.25	147.00	308.25	508.25	29
	70.00		66.00			169.35	123.00	17.80	325.00	30
112	256.00	26	65.00	118	32.75	134.25	29.25	137.00	96.25	31
176	291.00	34	84.00	105	31.25	23.75	48.30	47.25	123.00	32
156	153.50	20	66.00	75	55.00	20.00	60.25	120.00	142.75	33
188	475.60	24	11.60		8.65	250.79	89.97	122.34		34
86	128.00			38	19.00	20.00	66.00	18.00	52.50	35
53	127.00	8	18.00	65	29.00	138.75	64.75	41.40		36
157	181.00	51	148.00		122.75	87.00	151.25	166.00	137.25	37
119	227.00	8	18.00	125	42.25	158.05	88.80	68.00	29.75	38
368	465.00	108	380.00	520	240.00	310.00	62.00	321.00	110.00	39
8	25.00			130	105.00	79.25	71.75	15.75	31.00	40
260	248.00	18	57.00	280	94.00	156.00	184.50	134.00	422.50	41
79	153.40	13	26.10	410	118.80	100.98	58.95	69.75	99.95	42
150	136.50	35	35.50		40.50	61.18	120.57	78.88	124.56	43
275	222.30	49	47.70	177	58.72	69.30	43.65	126.22	249.67	44
44	87.00	68	83.00	152	51.50	79.00				45
				160	51.50	155.75	46.75	125.50	139.75	46
141	416.00	25	62.00	192	115.00	55.50	79.00	60.00	46.50	47
280	320.00	16	56.00	325	72.50	212.25	421.25	75.00	242.85	48
39	50.50	63	43.50	61	12.75	74.60	139.50	27.25		49
17	128.00	16	42.00	27	18.00	48.50	49.50	100.50	22.05	50
65	196.00	14	23.00	135	39.50	130.50	72.50	42.50	33.00	51
95	322.00	15	38.00	183	63.75	180.00	64.50	81.25	27.45	52
152	272.00	12	16.00	642	312.25	55.00	107.50		66.00	53
78	108.50	47	133.50	330	91.50	198.00	72.20	47.25	20.50	54
120	339.50	26	82.00	78	16.00	81.00	70.50	85.50	97.25	55

TABLE No.

Number	County and City or Town	Number of exhibitors	Number of exhibitors live stock department	Horses		Cattle	
				No. exhibited	Premiums paid	No. exhibited	Premiums paid
56	Mahaska, New Sharon	160	45	70	202.80	18	34.20
57	Mahaska, Oskaloosa	807	146	179	1,336.50	154	1,153.00
58	Marion, Knoxville	640	102	76	303.00	100	409.00
59	Marion, Pella	227	17	71	352.00	53	315.00
60	Marshall, Marshalltown	1,000	100	115	389.00	188	963.00
61	Mills, Malvern	75	38	37	176.00	50	373.00
62	Mitchell, Osage	81	20	26	88.00	72	346.00
63	Monona, Onawa	85	48	9	46.00	9	114.00
64	Monroe, Albia	905	494	74	359.95	38	244.30
65	Muscatine, West Liberty	166	76	68	635.00	82	750.00
66	O'Brien, Sheldon	208	21	6	112.00	125	452.00
67	O'Brien, Sutherland	106	38	32	112.75	38	172.50
68	Page, Clarinda	87	19	80	321.50	34	151.00
69	Page, Shenandoah	124	34	8	340.00	5	173.00
70	Pocahontas, Fonda	200	20	47	75.50	....	....
71	Pottawattamie, Avoca	85	24	12	730.00	16	88.00
72	Poweshiek, Grinnell	125	34	20	76.50	40	241.00
73	Poweshiek, Malcom	81	31	22	97.00	15	110.00
74	Sac, Sac City	118	17	24	246.00	13	107.00
75	Shelby, Harlan	154	61	85	331.50	75	350.00
76	Sioux, Orange City	70	34	20	96.00	40	170.00
77	Story, Ames	190	40	76	217.00	29	165.00
78	Tama, Toledo	183	54	40	157.00	59	276.50
79	Taylor, Bedford	45	7	7	20.70	....	135.90
80	Union, Creston	....	....	....	....	....	....
81	Van Buren, Milton	64	22	40	625.00	24	350.00
82	Wapello, Agency	413	60	61	158.50	74	451.50
83	Warren, Indianola	118	37	24	199.00	26	181.50
84	Wayne, Corydon	201	47	50	532.00	120	582.00
85	Winnebago, Forest City	64	28	9	82.00	64	205.25
86	Winneshiek, Decorah	90	24	18	101.00	20	69.00
87	Woodbury, Sioux City	974	399	172	705.00	406	2,659.00
88	Worth, Northwood	204	35	16	71.15	28	63.65
89	Wright, Clarion	76	18	18	126.00	5	69.00
89	Totals 1918	21,108	4,863	3,911	$ 24,230.74	5,579	$ 31,889.76
93	Totals 1917	24,218	4,459	5,552	$ 28,948.43	5,689	$ 33,992.13
99	Totals 1916	23,955	4,454	6,836	$ 32,877.66	7,080	$ 37,440.65
93	Totals 1915	20,687	4,144	6,036	$ 26,913.53	5,270	$ 27,628.92

3—Continued.

Swine		Sheep		Poultry						
No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	Premiums paid agricultural department	Premiums paid pantry and kitchen department	Premiums paid fine arts department	Premiums paid all other departments	Number
75	80.52	40	56.85	30	15.09	86.77	30.28	73.49	13.50	56
404	993.00	224	326.00	985	253.35	302.00	183.25	653.00	317.65	57
201	525.00	90	164.00	160	116.50	173.75	48.25	148.75	442.23	58
34	111.00	26	74.00	180	108.00	74.40	21.50	18.75	157.50	59
600	806.00	85	311.00	883	274.70	230.25	101.40	456.95	527.40	60
100	362.00	30	117.00	66	43.75	44.75	130.50	107.05		61
60	154.00			138	43.00	71.25	3.75	54.00	28.75	62
38	122.00	10	36.00	22	9.00	141.25	42.50	36.50	59.00	63
123	275.50	45	260.00	214	152.50	95.70	35.95	88.10	80.00	64
140	492.00	42	132.00	275	184.50	178.25	85.50	273.75	223.75	65
112	228.00			35	21.75	100.25	46.75	28.63	86.95	66
40	62.00	4		68	56.25	42.75	24.00	45.50	74.50	67
44	130.20	53	195.50	87	41.00	93.25	66.75	39.50	185.80	68
19	177.50	2	32.50	100	49.00	40.50	23.00	196.75	83.55	69
				110	35.00	51.75	47.25	156.75	85.75	70
250	424.05			125	45.30	48.75	22.75	49.75	37.00	71
85	118.00			70	36.50	66.00	32.75	141.00	129.00	72
50	136.00	12	25.00	64	18.50	85.00	44.00	71.00	22.15	73
94	208.50	9	26.00	163	114.50	51.10	128.70	27.95	192.24	74
140	192.00	16	38.00	148	64.25	31.00	23.00	30.50	280.85	75
100	88.00			50	20.00	70.00		100.00	23.65	76
98	133.00	30	38.00	250	43.00	107.00	69.25	60.75	20.00	77
384	192.00	121	290.50	88	33.00	100.75	81.75	159.25	87.05	78
5	25.00					57.65	54.40	18.71	43.69	79
						100.00				80
36	105.00	20	55.00	64	42.50	88.50	130.00	97.50	32.50	81
89	178.50	41	121.00			212.75	59.00	60.00	510.00	82
89	189.00	31	60.00	285	163.75	229.75	61.00	174.25	32.00	83
331	421.00	74	278.00	310	205.00	497.75	167.25	92.00		84
85	194.25	20	39.00	211	41.00	101.25	36.85		170.05	85
37	106.00			325	178.00	126.75	101.50	97.75		86
1,569	1,055.00	132	308.00	822	134.00	1,805.50	420.10	216.15	215.00	87
59	115.25	22	21.00	201	42.25	156.50	37.26	64.45	24.25	88
78	243.00	6	20.00	29	17.00	32.00	63.00	12.00	18.00	89
12,111	$20,580.31	2,895	$ 7,059.30	15,767	$ 6,566.67	$ 12,088.55	$ 6,680.73	$ 8,639.97	$11,570.72	89
10,695	$17,213.64	3,007	$ 7,120.03	16,184	$ 6,822.27	$ 11,685.07	$ 6,927.21	$11,251.14	$13,266.56	93
11,151	$17,435.45	2,897	$ 7,291.30	15,762	$ 6,678.76	$ 11,993.45	$ 6,611.62	$11,176.08	$13,122.53	99
9,377	$14,034.45	2,783	$ 6,140.77	14,317	$ 5,397.08	$ 9,534.51	$ 6,307.62	$ 8,710.29	$12,711.43	93

TABLE NO. 4—TOTAL ATTENDANCE, TOTAL PAID ADMISSIONS AND ADMISSION FEES CHARGED AT COUNTY AND DISTRICT FAIRS IN IOWA FOR 1918.

Number	County and City or Town	Total attendance	Total paid admissions	Outside Gate Admission			Grandstand		
				Adults	Vehicles	Children	Day admissions	Total day admissions	Total night admissions
1	Adair, Greenfield	6,969	6,969	50	25	25	15	1,089	546
2	Adams, Corning	6,311	6,311	50	25	20	15	1,100	
3	Allamakee, Waukon	7,000	6,517	55	25	25	25	851	
4	Audubon, Audubon	10,800	10,283	50	50	25	25	2,218	[illegible]
5	Benton, Vinton	6,122	5,872	50	25	25	25	1,127	37[illegible]
6	Black Hawk, Cedar Falls	26,445	22,844	50	50	25	25	10,904	8,859
7	Black Hawk, Waterloo	54,200	40,345	50	50	25	25		3,444
8	Boone, Ogden	2,700	1,595	50	35	25	10	229	
9	Bremer, Waverly	16,908	11,850	50		25	25	2,783	1,683
10	Buchanan, Aurora	3,317	3,035	25	25	15			
11	Buchanan, Jesup	5,101	5,101	35	25	25			
12	Buena Vista, Alta	14,000	13,337	50	25	25	25	2,333	
13	Butler, Allison	13,000	9,300	35	35	25	25	1,027	420
14	Calhoun, Manson	11,137	4,678	50	25	25	25	550	978
15	Calhoun, Rockwell City	7,500	7,487	50		10	25	1,939	
16	Carroll, Carroll	4,175	3,945	50	35	25	25	674	
17	Cass, Atlantic	15,928	15,728	50	25	25	25	4,886	378
18	Cass, Massena	4,862	4,862	50		25	10	779	
19	Cedar, Tipton	13,000	9,300	35	35	15	25	2,854	561
20	Cerro Gordo, Mason City	19,243	11,243	50	25	15	25	3,596	1,696
21	Clay, Spencer	28,000	26,540	50	25	25	25	8,992	4,475
22	Clayton, Elkader	7,300	6,531	50	50	25	25	1,231	451
23	Clayton, National	2,468	2,357	35	50	25	15	337	
24	Clayton, Strawberry Point	8,000	6,000	50	50	25	15	2,100	1,400
25	Clinton, DeWitt	15,000	11,694	50	50	15	25	5,598	
26	Crawford, Arion	4,645	4,047	50	50	25	25	535	
27	Davis, Bloomfield	28,000	16,225	35	25	15	25	5,000	
28	Delaware, Manchester	13,000	10,877	50		25	25	1,914	1,902
29	Des Moines, Burlington	30,481	27,429	50	25	25	25	13,915	7,529
30	Dickinson, Spirit Lake	9,138	8,420	50	25	25	15	777	
31	Fayette, West Union	20,775	10,500	35	50	35	25	2,991	2,214
32	Greene, Jefferson	11,373	11,373	50	25	25	25	2,297	
33	Grundy, Grundy Center	6,500	4,784	50	35	25	15	1,036	
34	Guthrie, Guthrie Center	12,000	10,100	35	35	25			
35	Hancock, Britt	10,000	5,997	50	25		25	668	
36	Hamilton, Webster City	2,200	2,132	50		25			
37	Hardin, Eldora	15,000	8,300	50	25	25	15	1,190	2,048
38	Harrison, Missouri Valley	18,000	12,555	35	35	20	25	3,230	
39	Henry, Mt. Pleasant	27,000	18,000	50	25		25	6,000	3,400
40	Henry, Winfield	3,500	3,100	50	25	25	25	1,500	
41	Humboldt, Humboldt	14,000	8,634	50			25	2,078	1,460
42	Iowa, Williamsburg	5,539	5,539	50	50	25	25	1,164	
43	Jackson, Maquoketa	10,000	8,300	50	25	15	25	948	
44	Jasper, Newton	15,000	12,769	35	35		25	2,366	1,912
45	Jefferson, Fairfield	510	510	25	25				
46	Jones, Monticello	14,500	12,000	50	25	15	25	3,000	1,950
47	Keokuk, What Cheer	7,977	6,927	50	25	25	25	1,279	
48	Kossuth, Algona	40,000	15,480	50	25	25	25	2,487	1,246
49	Lee, Donnellson	3,200	3,200	50	25	25			
50	Lee, West Point	2,636	2,636	50	25	25			
51	Linn, Central City	10,000	9,000	35	25	15	15	3,500	4,000
52	Linn, Marion	7,500	6,236	50	25	25	25	2,500	1,000
53	Louisa, Columbus Junction	8,063	8,063	50	25	25	25	2,315	968

TABLE No. 4—Continued.

Number	County and City or Town	Total attendance	Total paid admissions	Outside Gate Admission			Grandstand		
				Adults	Vehicles	Children	Day admissions	Total day admissions	Total night admissions
54	Lucas, Derby	3,385	3,340	25	25	15			
55	Lyon, Rock Rapids	15,926	15,926	50	25	25	25	8,627	
56	Mahaska, New Sharon	3,300	3,200	35	25		25	1,500	
57	Mahaska, Oskaloosa	39,219	33,032	50	25	25	25	12,360	7,220
58	Marion, Knoxville	25,000	18,385	50	25	25	25	3,000	2,006
59	Marion, Pella	5,200	4,920	35		15	25	765	
60	Marshall, Marshalltown	31,876	20,276	50	25	25	25	4,725	2,581
61	Mills, Malvern	15,000	13,677	50	25	25	25	4,800	
62	Mitchell, Osage	5,500	5,097	40		25	15	962	490
63	Monona, Onawa	3,263	3,263	50		25	25	1,551	
64	Monroe, Albia	13,000	12,000	50	25	15	15	4,267	
65	Muscatine, West Liberty	18,500	16,250	50	50	25	25	3,546	1,706
66	O'Brien, Sheldon	13,694	13,694	50	50	25	25	1,779	649
67	O'Brien, Sutherland	10,000	9,224	50	50	25	25	690	
68	Page, Clarinda	16,500	13,458	50	25	25	25	1,378	1,328
69	Page, Shenandoah	14,000	11,330	50	25	25	15	1,505	
70	Pocahontas, Fonda	4,500	4,200	50	25	25	25	1,000	
71	Pottawattamie, Avoca	8,822	7,822	35	35	20	25	1,844	
72	Poweshiek, Grinnell	11,504	7,510	50	25		25	2,204	1.780
73	Poweshiek, Malcom	8,000	2,719	35	25	25	25	984	
74	Sac, Sac City	11,034	10,674	50	25	25	25	3,398	501
75	Shelby, Harlan	25,000	12,585	35	35	20	25	4,117	
76	Sioux, Orange City	5,000	4,000	50	50	25	25	498	
77	Story, Ames	7,261	5,861	35	25				
78	Tama, Toledo	8,000	7,764	50	25	25	25	1,303	277
79	Taylor, Bedford	10,016	10,016	50	25	25	15	1,865	
80	Union, Creston	3,000							
81	Van Buren, Milton	5,890	5,125	35	35		10	1,000	
82	Wapello, Agency	4,000	3,610	25		10			
83	Warren, Indianola	14,488	12,000	35	25	15	25	2,799	
84	Wayne, Corydon	24,000	14,700	50	25		25	5,000	
85	Winnebago, Forest City	5,500	5,254	50	25	25	25	1,182	400
86	Winneshiek, Decorah	14,318	14,318	50		25	25	1,407	981
87	Woodbury, Sioux City	75,363	68,163	50		25	25	24,749	
88	Worth, Northwood	4,500	3,220	35	25		15	450	
89	Wright, Clarion	6,879	6,879	50	25	25	25	1,519	
89	Totals 1918	1,150,461	910,349					226,661	75,795
93	Totals 1917	1,345,259	1,094,968					270,991	91,766
99	Totals 1916	1,272,479	991,057					279,714	66,600
93	Totals 1915	1,115,605	838,047						

Admission Fees Paid	55 Cents	50 Cents	40 Cents	35 Cents	25 Cents	20 Cents	15 Cents	10 Cents	No Chge
Gen. admission, outside gates									
Adults	1	63	1	19	4				1
Vehicles		14		11	51				13
Children				1	58	4	12	2	12
Grandstand admissions					62		13	3	11
Quarter stretch admissions:									
Persons					30		7	2	50
Vehicles		1		1	9		3	2	73

IOWA STATE FAIR AND EXPOSITION.

Iowa's Sixty-fourth Annual Exposition of Agriculture is over and becomes a subject for the chronicler of commonwealth affairs. It was promoted and carried to a successful termination under conditions never faced before and which, it is to be hoped, will not be a controlling factor again. The attendance totaled 324,377, a very satisfactory figure under the circumstances and next to the largest attendance ever given to the Iowa State Fair. It was a success financially, which is also a matter of congratulation, for while the fair is in no sense to be listed with purely money-making enterprises, profits indicate businesslike management. Besides in the case of a self-supporting institution profits are very necessary for the upkeep and improvement of the plant and its equipment.

The weather, always of first consideration in carrying on fair work, was about all that could be desired. Save for an occasional district that had recently been visited with local showers the roads were in good condition for automobile travel. For the first time in eight years a reduced rate on all railroads came as a welcome concession to those who preferred to make the trip to the fair by rail rather than by auto. All these things combined to encourage a much greater attendance than might reasonably have been expected when it is remembered how many Iowa citizens are at present outside the state, called thither by enlistments, the draft and a score of war activities.

It was a war-time fair. From beginning to end the spirit of patriotism was in evidence, not in a rampant way, but deep seated and earnest, and ready to burst forth into spontaneous expression at the slightest provocation. From every flag pole and vantage point the Stars and Stripes floated and the national colors were favored above all others for decorative purposes. Thousands of khaki uniforms sprinkled the great moving human color scheme. The government exhibit accented the pervading sentiment of loyalty. The various exhibits and demonstrations in the line of food conservation were proof that the people of Iowa appreciate the situation and are co-operating with the plans and recommendations of the National Food Administration. The finishing touch to all these evidences of loyalty was added by the arrival of the "Flying Circus" of war planes.

As in the case of other big fairs this year certain departments showed a marked decrease in number of exhibits compared with some other years. The thinking man finds no surprise in this fact.

Instead, when he remembers the grievous scarcity of the class of labor required in preparing and making exhibits, the attendant expense and the uncertainty of traffic conditions he finds himself wondering that the displays were so numerous. There was a noticeable absence of the tempting displays of candies, cakes and other toothsome dainties that were seen in the kitchen and pantry department in other years. Live stock exhibits, particularly in the horse and cattle departments, were somewhat fewer than formerly, due partly to the unfortunate clash of dates between the Iowa and Illinois fairs. As usual the machinery show was a mighty one. If there was any falling off in this department it was found in the displays of smaller implements and appliances shown under cover of Machinery Hall, not in the big machines outside. This, too, is consistent with the present trend of farming operations which seek to counterbalance the growing scarcity of man power with mechanical power in the form of bigger machines.

There were very few county exhibits. Plainly the people were too busy with other affairs to spare the time and labor necessary to prepare an exhibit of this character. The few in evidence were very good indeed. Buena Vista county won a blue ribbon with a nice display of products, the central figure or decoration being an excellent reproduction of the Liberty Bell, done in small grains and grass seed. It was a very artistic bit of work. Polk county won a prize with a study in golden browns and tans, harvest colors befitting the time and occasion. A conspicuous part of the exhibit was Polk county's Service Flag worked out in red, white and old-fashioned blue corn. Individual farm exhibits were forth in about the usual number, as good and as nicely arranged, probably as were ever seen at the fair. There was a fine display of fruits, early varieties of course predominating, much better, as a whole, than would have been expected in the face of the unfavorable reports coming from the fruit-growing districts of the state.

One of the most impressive features of the entire fair was the show of baby beef, when 107 proud Iowa lads and lassies, mostly of a very tender age, led their charges into the big judging ring in the Stock Pavilion to try for the prizes. It was the hardest undertaking set for any of the judges during the fair to pick the prize winners and sort the herd according to individual worth and excellence. Professor Pew, formerly of Ames, who, by the way, is entitled to be called the originator of the baby-beef movement in Iowa, spent the good part of a half day with these young Iowans and their calves. Through it all the youthful owners stood patiently waiting the judge's pleasure. Some of the calves were exceptionally good and showed care and judgment in fitting. One's heart went out to the youngsters that had to make the tail end of that procession of 107 calves, and longings were stirred for the possession of the riches of a Carnegie or some other purse-fattened favorite of the gods of wealth that he might bestow a substantial prize upon every mother's son and daughter of the lot.

Cattle and horses, if not out in such liberal numbers as on some other occasions, were good enough individually and collectively to make up for any lack of quantity. The city dweller who could look unmoved on those parades of prize-winning cattle at the night shows in the Stock Pavilion without being swept with a desire to throw everything else to the winds and get himself in some way identified with the production of such splendid animals, must have been hopelessly rutted in other lines. Iowa stables furnished the greater part of the heavy-horse show and contributed liberally to the show of light harness horses and saddlers. After watching the splendid big drafters one realizes that at last the Iowa farmer-breeder is learning the lesson of liberal feeding from weaning time to maturity in order to develop the weight demanded in the open markets. Small breeders and new exhibitors were numerous. The Shetlands were out in strong numbers and with quite as many youthful admirers swarming about the stalls.

The swine show was up to the Iowa standard, which is saying more than a little. Approximately 2,500 animals were actually in the pens. Thousand-pound hogs were common. Eight different breeds were represented and each appeared to have plenty of admirers. One could not but marvel at the money value of that great aggregation of pure-bred swine. There may have been a few young porkers that could have been bought for $50, but the majority of them would easily command from $100 up, as prices go at present, more than a few of them running into the thousands. Even the shipping crates ran into money pretty fast, for more than half of that great gathering traveled to and from the fair in crates. One man said his crates cost him about $3.50 more than a year ago. Another, with a brand-new outfit, said his crates cost $4.50 each in addition to his own labor contribution toward the building of them. This state fair show is a popular market place and sales were many. The several members of a single litter brought $1,000 for the breeder. Another exhibitor sold 15 out of 19 head, each one going to a different town. It is in such cases that the crates come into play. Some of the big fellows, up to 800 and even 900 pounds, are crated and it is a back-straining job to handle them on and off the cars.

There was a creditable show of milk goats, the first ever seen at the Iowa fair, or any other in the Middle West, for that matter. They attracted much attention. Their coats were like that of a certain Hebrew youth of Biblical history—of many colors: black goats, brown goats, red goats, white, fawn, speckled and spotted. The lady goats were very trim in appearance, clean looking and dainty, and really one can think of no good reason why they should not become an accepted institution in Middle West dairy affairs. There was one big brown William goat that made the average visitor wonder what would happen in case he were to get loose. He was a regular Jumbo of a goat, as tall at the shoulders as an ordinary dining table. He was chained securely in the center of his pen beyond the reach of a curious public. There was a distinct air and attitude of preparedness about him that made one wish for about a million just like him to turn against the Huns. He was ready to fight, and all day long he stamped his hoofs, ground his jaws and blinked fiery topaz-colored eyes at passing visitors.

The popularity of the government exhibit was proven by the uninterrupted stream of visitors that flowed through the building and jammed the aisles all day long. It was a comprehensive exhibit, put on jointly by the War Department and the Agricultural Department, the latter including various activities such as the Bureau of Markets, Bureau of Entomology, Forestry, Animal Husbandry, etc. Naturally, the average visitor was most interested in the displays that had to do with the war, the huge torpedoes, machine guns, gas masks, bombs and scores of articles that go to make up the equipment of the 1918 fighting man. The mannikins representing soldiers, sailors and other branches of military service looked so realistic that one almost expected to see them step into action. It was an excellent exhibit, one that gave a great deal of pleasure to fair visitors and valuable from an educational point of view in giving the public a better and clearer idea of what the government is doing to help along the industries of agriculture and stock raising.

On Thursday following the awarding of the prizes in the baby-beef class, 95 of the 107 animals were sold at auction. Prices ranged up to 22 cents a pound, the average for the 95 head being 18 cents. The packers were the buyers, Armour & Co. taking 22 head; Morrell & Co., of Ottumwa, 35 head; the Iowa Packing Company, of Des Moines, getting 21, and the Sinclair Company, of Cedar Rapids, 15 head. These calves varied in age from 12 to 18 months; weights ranged from 700 to 1,200 pounds.

The tractor show was one of magnitude and variety and farmer visitors took a lively interest in it. There were 29 exhibitors, all told, and they had a total of 118 tractors on exhibition. This show must have been a revelation to the man who has not kept close tab on the progress made in tractor building the past three or four years. It must have convinced him, too, that this latest addition to farming in the Middle West has advanced far beyond the experimental stage. The machines were as widely varied in size and type as in numbers. They ranged in size from what might be called the Shetland pony type to the largest drafter; from the small machine suited to the small farm to the huge ''bulls'' fit to furnish power on the great ranches the size of townships. An occasional exhibitor showed but one or two machines, but as a rule they displayed from five or six to a dozen of different sizes and power. It was easily the biggest and best tractor show ever seen at the fair and furnished a sort of foretaste of what may be expected from this time forward.

The Women and Children's Building was the real center of interest for the women folk. The babies health contests were, of course, the star attraction. The Hawaiian Orchestra delighted everybody with their native songs and airs. The Wild Flower Pageant and the style show attracted by their novelty and pleased with their excellence. An occasional mere man ventured into this realm of female doings, but the bustling maelstrom of silken skirts and femininity soon roused his curiosity and he would emerge with a sort of dazed look as if uncertain of himself and his rights. Each succeeding year adds to the attractiveness of this building and its environment as the shrubbery and climbing vines do their part toward the decorative scheme and the popularity of the place as a center of the things that make especial appeal to womankind grows apace.

One of the best features included in the list of attractions scheduled for the Women and Children's Building was the art exhibit. There was a very excellent display of pictures by Iowa artists, who, under the terms and conditions, are the only ones allowed to compete for the prizes. In addition to the demonstration of Hawkeye talent there was a fine collection of canvases loaned for the occasion by the artists of Chicago and vicinity, also one from Minneapolis presenting the work of Minnesota artists. A notable feature of the exhibit was a group of seven characteristic studies by J. Laurie Wallace, of Omaha. These loan exhibits are to be commended as they serve to acquaint Iowa people with the work of artists in other centers and keep them in touch with the world of things artistic. Those in charge of the exhibit insist that fair visitors this year showed much more interest in this department than ever before. Time was, not so very long ago, when the average Iowan was too busy hustling bread and butter and lifting mortgages to have given an exhibit of this character very much consideration.

A significant sidelight on things mechanical was the entire absence of buggies and carriages in connection with the machinery exhibits. Not a single vehicle of that kind was to be seen. Horse-drawn vehicles were limited to farm wagons and manure spreaders, and the farm truck is boldly pushing the first named to the rear. A few years more and the farm wagon, like the buggies, will have been eliminated from such shows, depending on the progress made in road building.

The auto show, for obvious reasons, was not up to the shows of 1917 and 1916, so far as numbers went. Farm trucks were in evidence and helped to make up for the lack of pleasure cars. The real auto show, and it was a mighty one, was spread all over the grounds. It is assuming stupendous proportions. What to do with it in the future is a problem that is giving the fair officials grave concern. The tract of ground east of the race track set aside a few years ago for auto-parking purposes is ridiculously inadequate. The overflow fills every available nook and corner of the grounds. Grand Avenue, Rock Island Avenue and other thoroughfares were thickly lined on both sides with cars. The woods on the hills east of the main buildings were literally full of them. They stood thicker than the trees. More than 44,000 cars passed through the gates during the fair. During the busy hours of entrance and again at departure following the afternoon and evening programs the congestion at the gates was so great that it taxed the best efforts of a big force of traffic officers.

A record-breaking crowd assembled on Thursday to welcome the "Flying Circus" of war planes due to arrive from Kansas

City. The first machine, piloted by Brigadier-General Lee, of the British army, reached the fair grounds about 4 o'clock. He was joined soon after by other flyers, eight machines altogether making the fair grounds during the afternoon. At one time five of them appeared together and went through various evolutions, singly and in battle formation, all more or less puzzling, of course, to the uninitiated but intensely interesting nevertheless. They presented a thrilling spectacle sailing so swiftly about high overhead with all the grace and ease and apparently with all the safety of huge birds. One marvelled at the wonder of it, and the imagination painted sensational pictures of fierce and deadly fighting between men thousands of feet above the earth. The power and speed of these great twelve-cylinder machines is quite beyond the comprehension of the mind untrained in such things. The trip from Kansas City, 271 miles, 'cross lots, was made in a trifle under two hours, approximately 140 miles an hour or very close to it. Truly that is joy riding with a vengeance.

Everybody enjoyed the amusement features in a thoroughly whole-hearted manner. It has been an exceedingly busy and strenuous summer for Iowans, especially for the farmers. The tension has been extreme and when the time came for relaxation it was accepted gratefully and made the most of, for it is characteristic of Americans to play with the same earnestness and enthusiasm that is put into their work. The Huns have discovered that they fight the same way.

State Fair visitors who enjoy horse racing—and that seemed to include pretty much everybody this year—were favored with some of the most sensational speed exhibitions that have contributed to the making of harness-horse history.

The most notable event was when Ed Allen drove the great pacer, Single G., 1:59½, to a new world's record for a half-mile track. That third heat of the free-for-all pace in 2:01 set a new track record for Des Moines, a new record for the state, and a new world's record for that gait in a race.

When the free-for-all pacers were called on Monday the big crowd was just a little bit disappointed when only two horses, Single G. and Lillian T., appeared to start. The day was superb, the track in fine condition, and naturally everybody was anticipating a good field and a fast race. But if the field was small, the extraordinary speed developed in the second and third heats fully compensated for the lack of numbers.

The first heat was paced by Single G. in 2:06, with the little black mare close up at the finish. The second heat was a fast one for a half-mile track, paced in 2:03¾, and put the former track record of 2:05¼, made two years ago, in the shade by a liberal margin. It was an extraordinary mile and roused tremendous enthusiasm and applause from the thousands in the grandstand and bleachers.

When the horses came out for the third heat, the judges announced that Mr. Allen would make an attempt to lower the world's record for a half-mile track. The announcement itself was a surprise to the spectators, for nobody, not even the most optimistic, had anticipated such an extraordinary mile as the one raced twenty minutes before, and they wondered vaguely if it were possible for the splendid bay to clip anything further from the unusual record just made.

The pair went away to a perfect start. The first quarter was paced in 30 seconds. A great cheer went up as the flying pair passed the half in 1:01½; the three-quarter pole was passed in 1:30½, and the mile completed in 2:01. The last half was paced in 59½ seconds, the four quarters respectively being done in 30, 31½, 29, 29½, seconds. It was an exhibition of the sort that mere words fall flat in attempting to describe, and one that no horse lover who witnessed it will ever forget.

It was a splendid achievement for both horse and driver. No man ever drove a greater mile, nor a more perfectly-rated one, than Mr. Allen drove that day, and that heat in 2:01 over a half-mile track will be chronicled by writers of harness horse history with the few ultra-great achievements that have been accomplished in the life of the American trotter. And since this extraordinary feat was achieved in Iowa, it is altogether fitting and proper that Mr. Allen, the master reinsman, is an Iowa man.

In considering this race, we must not fail to give due credit to the splendid little black mare, Lillian T. She was timed separately that last heat in 2:02½, which not only broke the track record established two years ago, and the one made twenty minutes before, but it was also faster than the former world's record of 2:02¾, the one Single G. was sent out to break. It did more than that; it lowered her own half-mile track record of 2:05¼, and clipped a quarter of a second from her mile-track record of 2:02¾. It stamped her as one of the greatest living pacers. She, too, was driven by a former Iowa man, Mr. Whitney.

The music by the many bands and orchestras was enjoyed. Shows, coasters and other merry-making devices did a thriving business. If the pink lemonade failed to taste as sweet as formerly nobody complained. The night shows in front of the amphitheater and in the Stock Pavilion were liberally patronized. Every afternoon the grandstand and bleachers were packed to capacity with eager-eyed people enjoying the race programs with their attending specialties. Throughout, it was a cheerful, orderly crowd. An arrest for any reason whatever was an unheard-of thing. The petty crimes and misdemeanors, such as pocket picking, boozing and fighting, that used to attend all great gatherings under the regime of the saloon, were utterly lacking. It was a happy, prosperous, patriotic gathering of the best people in the world, in every way typical of prevailing conditions in Iowa today.

ATTENDANCE AND FINANCES

The attendance at the 1918 fair was 324,377, or about 25,000 less than the attendance in 1917. Taking everything into consideration this was a remarkable attendance. In fact it was 23,400 more than 1916, which was the largest attendance the fair ever had until the record-breaking year of 1917.

The attendance at the day and night grandstand was the largest in the history of the fair. The day grandstand attendance was 87,775 and the night 80,089. On Thursday, August 29, new records were estabished at the outside gates, day grandstand, and for the total receipts for one day. There were 67,072 admissions at the outside gate; 23,810 at the day grandstand and the total receipts for the day were $45,064.78.

The total receipts for the 1918 fair were $251,196.62. This was a decrease of $5,925.94 as compared with 1917 receipts and an increase of $49,804.66 over the receipts of 1916, which was about an average or normal year.

The cost of the 1918 fair was $202,089.76. This is an increase of six and one-half percent over the cost of producing the 1917 fair. In dollars and cents the increase was $12,556.38. The cash premiums offered in 1918 amounted to $7,000 more than in 1917, but on account of the shortage of county and individual farm exhibits, and the absence of Galloway and Brown Swiss cattle the amount paid out was $91.94 less than paid out at the 1917 fair. The cash premiums paid totaled $72,350.13.

All other expense of the fair, in addition to the premiums, amounted to $129,739.63. This was an increase of $12,648.32 over similar items for 1917. This is a reasonable increase considering the advance in cost of printing, advertising, labor, attractions and supplies and materials of all kinds.

In summing up the receipts and disbursements of the department the itemized statement made a part of this report shows the balance on hand December 1, 1917, to be $34,822.20.

The receipts from the stallion registration division, state appropriations and from sources other than the state fair were $21,213.91; from the state fair $251,196.62, making the total receipts for the fiscal year ending November 30, $307,232.73. The disbursements, which are fully itemized in the attached statement, show the following expenditures:

Expense of State Publicity Bureau, Stallion Registration and other expenses not pertaining to the state fair, $11,667.74. Cost of maintaining grounds and buildings, $12,217.77; improvements to buildings and grounds, $30,771.08; cost of fair, $202,089.76, and total disbursements, $256,746.35. This leaves a balance in the Treasury on November 30th of $50,486.38. The statement also shows that the fair made a profit of $49,106.86.

IMPROVEMENTS.

There was expended for improvements on the state fair grounds during the past year $30,771.08, and $12,217.77 for maintaining the buildings and grounds. In addition to this the city assessment of $3,520.41 for paving East Thirtieth Street was paid but not charged to improvements.

The state appropriation of $7,500 for paving was expended as follows:

City assessment for paving and curbing East Thirtieth Street, $3,520.41; contract for curbing and paving Grand Avenue entrance, $2,937.14; Walnut Street entrance, $2,713.63; making a total of $9,171.18, or $1,671.18 in excess of the state appropriation, and which was paid out of state fair receipts.

Cement floors were placed in the aisles of Machinery Hall at an expense of $4,417.94, and in Power Hall at a cost of $2,818.18.

Several thousand square feet of cement walk was laid at an expense of $4,662.00. The board also purchased the steel and brick building owned by the Shaver Carriage Company for $2,750.00.

There was expended in alterations to basement of Administration Building, $3,631.04. The changes provided a dining room, store room, small rest room and toilets for ladies and gentlemen.

The other items for minor improvements and expenditures for maintenance of grounds will be found in the following itemized statement:

ITEMIZED STATEMENT OF RECEIPTS AND DISBURSEMENTS OF THE IOWA DEPARTMENT OF AGRICULTURE AND THE IOWA STATE FAIR AND EXPOSITION FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1918.

Cash balance December 1, 1917		$ 34,822.20
Receipts from sources other than fair:		
Fees, stallion registration division	$ 6,981.00	
State appropriation for paving	7,500.00	
State appropriation for support of Dept. of Agri.	2,400.00	
State appropriation for insurance	1,000.00	
Stall rent, speed barns	268.00	
Pasture rent	124.65	
Interest on department account	789.72	
Use of barns for horse and cattle sales	685.00	
Received for drayage account cattle sales	65.50	
Corn from Horn of Plenty—sold	778.50	
Rent for Wilkins house	112.00	
Rent for poultry cooping	31.60	
Refund on freight	2.32	
Special prize money, 1917 Hampshire swine	1.30	
Space rental, 1917 Exposition Bldg	10.00	
Received for painting private bldg	33.97	
Kindling sold	33.00	
Old lumber sold	195.25	
Old wire and iron sold	83.61	
Misc. sales by supt. of ground	2.50	
Insurance on substation, damaged by fire	86.59	
Insurance on Expo. Bldg., damaged by lightning	29.40	
Total receipts other than fair		$ 21,213.91
Receipts of 1918 Fair:		
Stall rent, horse department	$ 1,040.00	
Stall rent, cattle department	922.50	
Pen rent, swine department	1,219.00	
Pen rent, sheep department	188.50	
Coop rent, poultry department	305.00	
Concessions, poultry building	115.00	

Machinery Department:			
Floor space, Machinery hall	$ 2,880.00		
Floor space, Power hall	165.00		
Floor space, Shaver Bldg	250.00		
Floor space, auto show room	1,434.50		
Outside space contracts	125.00		
		$4,854.50	
Concessions, Agricultural Bldg		2,055.03	
Dairy Dept., ice cream sales		2,636.50	
Concessions and space, Exposition building		2,115.00	
Concession and Privilege Department:			
General concessions	$ 20,457.50		
Wortham shows (per cent)	8,878.60		
Grandstand concession (per cent)	2,653.17		
Score card privilege (per cent)	516.96		
Giant coaster (per cent)	1,954.46		
Barney Oldfield (per cent)	326.69		
Official catalog	164.34		
Wrestling tournament	642.00		
Delivery and baggage permits	524.00		
		36,117.72	
Light and power sold		595.85	
Colections from telephone exchange		238.96	
Speed department, entry fees		6,521.50	
Western Breeders' Futurity fund		1,075.00	
Iowa State Futurity fund		595.88	
Sale of forage		10,995.32	
Association special premiums		8,260.86	
Entry fees National Draft Horse Futurity		439.00	
Advertising in premium list		1,284.00	
Advertising in official catalog		1,104.50	
Horticultural dept., sale of apples		65.98	
Refund on railroad fare, Thaviu band		22.56	
Receipts from day nursery		70.81	
Receipts from vending machines		10.90	
Receipts from use of service flag		35.00	
Total receipts of fair other than ticket sales		$ 82,884.87	
Ticket sales:			
Exhibitor's tickets sold by sec'y	$ 2,800.00		
Outside gates	103,493.25		
Day amphitheater	31,630.50		
Night amphitheater	27,594.75		
Night stock pavilion	2,793.25		
Total ticket sales		168,311.75	
Total receipts of fair			$251,196.62
Grand total receipts			$307,232.73

DISBURSEMENTS.

Disbursements other than fair or improvements:			
Stallion Registration Division:			
Salary, chief clerk	$ 1,710.00		
Salary, clerk and stenographer	1,035.00		
Salary. extra clerk	87.50		
Office supplies	.65		
Cuts and electros for report	14.88		
Stud books	8.00		
Certificates	94.92		
Seals for certificates	12.30		
Expense attending meeting Nat'l assn	43.59		
		$ 3,006.84	
Publicity Department:			
Salary, director, seven months	$ 1,083.34		
Salary, stenographer, two months	150.00		
Printing, Greater Iowa	981.66		
Postage, Greater Iowa	59.32		
Drayage, Greater Iowa	16.25		
Cuts and engraving	119.82		
Making addressograph plates	4.12		
Office supplies	2.50		
Envelopes and wrapping paper	95.19		
Newspaper clippings	54.00		
Subscriptions, live stock and breed papers	7.00		
		2,573.20	
Expense 1917 fair paid during 1918:			
Premiums paid	$ 63.00		
Salary, treasurer	100.00		
Expense graphic and plastic arts	69.90		
Fair ground supplies	14.97		
Plants and flowers	33.60		
Subscriptions to daily papers	7.33		
Expense, judges horse department	21.45		
Expense concession department	15.58		
Binding 1917 award books	8.00		
		333.83	
State Agricultural convention		595.42	
Expense on account of live stock sales		577.12	
Insurance premiums on buildings		697.74	
Assessment for curbing and paving East 30th street		3,520.41	
Clerical help on crop statistics		36.00	
Expense acct. Red Cross benefit		27.75	
Premium on secretary's bond		25.00	
Drayage on poultry cooping for winter show		49.50	
Option on land and rental		100.00	
Expense boxing seed corn, Horn of Plenty		12.25	
Taking up 1915 premium warrant		8.00	
Flowers acct. G. S. Gilbertson, deceased		3.50	
Flowers acct. W. J. Sievers, deceased		7.38	
Flowers acct. O. A. Olson, deceased		14.25	
Dues Chamber of Commerce		20.00	
Membership fees and dues, advertising club		23.75	
Dues E. Des Moines Commercial association		10.00	
Subscription for daily papers		13.80	
City directory		7.00	
Membership fee National Ass'n of Commissioners of Agriculture		5.00	
Total expense other than fair or improvemnts			$ 11,667.74

Maintenance of Grounds and Buildings:

Water, except July, August and Sept	$ 179.05
Electric current	201.78
Repairs to boilers	8.10
Superintendent, assistants and watchman	1,971.17
Water system, repairs and temporary extensions	245.98
Mule team, feed, shoeing, etc	316.18
Farm house, paper, painting and repairs	45.23
Cleaning buildings	58.41
Cleaning grounds	93.75
Motor truck, gas, oil and repairs	366.34
Seeding and grading lawn	205.90
Trimming trees, shrubs, etc	688.85
Women and Children's Bldg., painting an repairs	423.46
Race track, working	685.25
Hauling manure from speed and cattle barns	348.83
Exposition building, repairs	75.40
Garden, plowing and planting	42.00
Streets, dragging, grading and oiling	1,904.89
Walks, repairs	48.00
Wrecking Horn of Plenty	97.75
Tools and implements, repairs	150.43
Outside fence, moving game farm fence	479.75
Swine pavilion, painting and repairs	300.77
Glass, miscellaneous buildings	139.28
Shaver building, painting	2.25
Grocery store, repairing floor	38.00
Cattle barns, repairs	70.75
Harness repairs	9.20
Agricultural building, repairs	286.36
Sheep barn repairs	58.08
Speed paddock, painting	2.25
Booths, amphitheater, painting	2.25
Amphitheater, painting and repairs	73.74
Substation repairs	84.09
Mowing grass and weeds	63.25
Drayage	179.92
Repairs to entrances	24.60
Horse barns, repairs	126.67
Administration Bldg., painting and repairs	253.12
Closets, repairs	392.07
Cane field, plowing and seeding	14.75
Power hall, repairs	91.96
Machinery hall, painting and repairing	84.00
Moving curb, Agricultural Bldg	20.50
Brick dining hall, repairs	34.50
Floral hall, repairs	7.00
Subway repairs	3.25
Pasture fence, repairs	3.50
Track fence, repairs	92.60
Meat market, repairs	8.00
Signs, painting and repairs	37.71
Stock pavilion, repairs	84.30
Lumber shed, repairs	21.00
Bleachers, repairs	400.31
College building, repairs	103.50
Boys' and Girls' Bldg., repairs	9.00
Repairing poultry coops	8.00
Repairing lawn seats	43.63
Repairing ticket boxes	2.00

Padlocks for buildings		33.95	
Rope for flag poles on buildings		29.92	
Wilkins' house, repairs		8.00	
Hardware and lumber for general repairs		116.44	
Street car station, painting and repairs		29.72	
Telephone system, repairs		126.61	
Light system, moving and resetting poles		60.47	
Total maintenance grounds and buildings			$ 12,217.77
Improvements and Permanent Repairs:			
Light system, electroliers and extensions		$ 613.82	
Streets, cinders and permanent grading		643.07	
Walks		4,662.00	
Curbing		275.62	
Tools and implements		113.75	
Fair Ground Equipment:			
Electric fans	$ 83.50		
Mattresses and pillows	70.00		
Ticket boxes	12.50		
Hand satchels and straps, Treasurers' department	10.50		
Water cooler	13.75		
Miscellaneous equipment	44.40		
		234.65	
Poultry building, architect fees		12.00	
Grand avenue entrance paving		2,937.14	
Walnut street entrance paving		2,713.63	
Shaver building, purchase price		2,750.00	
Machinery hall, cement floor		4,417.94	
Sheep barn, balcony and new roof		659.65	
Water system, pipe and permanent extensions		515.35	
Administration building, alterations		3,631.04	
Office furniture		63.03	
Power hall, new cement floor		2,818.18	
Amphitheater, painting stairway		4.50	
Trees and shrubs, permanent planting		244.30	
Closet No. 33, camp grounds, new		644.51	
Closet No. 19, converted into sanitary toilet		191.19	
Closet No. 18, converted into sanitary toilet		259.49	
Closet No. 23, converted into sanitary toilet		135.10	
Granite coping on Grand Ave. and E. of W. & C. Bldg.		917.55	
Administration building, furnishings		272.39	
Women and Children's Bldg., new stage & equip.		279.82	
Light system, mazda lamps		256.99	
Telephone system, extensions		107.82	
Grading east Women and Children's Bldg		396.55	
Total improvemnts and permanent repairs			$ 30.771.08
Expense of fair, other than premiums:			
Executive committee meetings		544.60	
Special committee meetings		869.01	
Express, telegraph and telephone		374.74	
Postage		1,543.84	

Printing:

400	Xmas cards & envelopes	$ 30.00
16,000	boys' camp circulars	56.00
10,150	premium list envelopes	30.52
7,500	entry blanks and circulars, draft horse futurity	28.00
1,000	premium list adv. circulars	5.60
1,000	premium list adv. contracts	4.35
2,000	boys' judging contest circulars	13.00
2	entry books	27.00
4,000	educational premium lists	60.00
900	entry blanks and classification, speed dept.	12.15
3,000	speed programs	35.00
1,000	gummed strips of labels	7.90
750	advance sheets, mach. dept.	8.90
1,000	applications, outside machinery space	5.45
750	applications, floor space, machinery department	5.60
12,000	premium lists	1,164.08
23,500	entry tags	63.22
1,000	ground payroll blanks	18.00
1,000	entry blanks and classification baby health dept.	11.25
500	classification, Graphic and Plastic Art department	7.25
2	ledgers, horse and cattle depts.	14.00
300	booklets, speed dept. early closing	27.00
500	classifications, Boys' and Girls' club exhibits	31.90
500	boys' judging contest pads	18.00
1,000	judge's sheets, horse and cattle departments	18.00
12,860	stall ring and concession numbers	149.00
1,000	exhibitor's certificates for refund on freight	5.25
500	index cards, mach. dept.	4.50
2,000	coop numbers, p'ltry dept.	14.50
5,000	variety cards, horticultural dept.	7.00
200	booklets, Iowa State Futurity entries	44.00
1,000	cards for making up catalog	3.75
5,000	time sheets for grounds dept.	19.00
200	placards, "No Parking"	5.00
250	placards, "Notice to Campers"	9.50
6,000	premium tags	13.50
400	receipts for exposition dpt.	6.00
1,000	judge's sheets, swine and sheep departments	16.50
1,000	premium warrant receipts	3.00
200	plats, concession ground	3.65

2,000 shipping tags	9.75	
700 premium warrant enclosures	5.20	
300 invitations, baby party	13.40	
1,000 order blanks in triplicate	13.50	
240 arm numbers, horse show	10.00	
144 neckties printed for boys' camp	3.25	
1,000 index cards, live stock entries	6.20	
400 booklets, speed dept., late closing	32.00	
1,000 ticket requisitions	8.75	
100 index cards, hort. dept.	1.00	
750 judging programs, horse dept.	19.00	
1,000 loose leaf record sheets	23.75	
100 placards, pig club	5.75	
1,000 attendance report blanks	9.00	
1,000 turnstile record blanks	12.50	
500 invitations and envelopes	26.50	
4,000 programs, Sunday music	30.00	
1,000 coin bag tags	4.50	
300 placards, Food Administration rules	22.80	
7,600 night horse show programs	47.50	
14,500 entry blanks	71.70	
6,000 official programs	1,514.00	
4,000 32-page catalogs, Baby Health Dept.	107.00	
1,000 grandstand report blanks	12.00	
1,000 outside gate report blanks	11.00	
4,000 programs, model Sunday School	39.00	
15,050 race programs, one-half cost	82.50	
2,000 turnstile record slips	20.00	
350 large daily programs	90.50	
3,000 catalogs, Graphic and Plastic Art department	63.59	
8,000 multigraph letters	48.75	
Tickets for all gates & side shows	1,231.50	
		$ 5,602.21
Advertising:		
Country weekly papers	$ 4,076.77	
Plate matter for country papers	841.94	
Daily papers outside Des Moines	458.50	
Des Moines daily papers	4,078.44	
Agricultural, live stock and breed papers	1,564.20	
Horse papers, adv. speed program	661.74	
Misc. papers and magazines	197.91	
Implement and machinery papers	140.00	
Supt. adv., salary five mos.	800.00	
Stenographer and clerk, salary five months	370.00	
Printing, Greater Iowa	807.89	
Postage on Greater Iowa	38.04	
Drayage on Greater Iowa	11.00	
Hangers and window cards	882.00	
Billboard papers and dates	135.55	

Billboard service	1,017.04	
Distributing advertising matter.	74.10	
Cuts and electros	119.99	
Co-operative publicity bureau...	15.00	
Newspaper clipping service	18.00	
Photographs for fair	126.00	
Miscellaneous items	5.50	
		$ 16,439.61
Music and Attractions:		
Night show, "The World's War".	$ 8,000.00	
Thaviu's band and International ballet	4,224.88	
Fischers' Burlington band	1,100.00	
Henry and His Band	1,320.00	
Iowa division Nat'l Drum Corps	340.00	
Royal Kealakai Hawaiians	500.00	
Chicago Grand Opera quartette.	425.00	
Eight hippodrome acts	4,831.80	
Auto polo	1,800.00	
Ft. Des Moines Glee club, meals and carfare	93.75	
163rd Depot Brigade band, Camp Dodge, transportation only.	27.00	
Great Lakes Naval Training station band, meals, contribution	289.50	
Military features by soldiers from Cp. Dodge, contribution	512.00	
British and American aviators, for incidental expenses	500.00	
		$ 23,963.93
Office supplies and stationery		383.25
Auto races, prizes and bonuses		6,300.00
Light and power (current)		743.83
Light and power (labor)		662.27
Water, July, August and Sept		605.68
Refund, stall rent, tickets, etc		259.75
Forage purchased for feed barn		10,627.73
Salaries, secretary and assistants		7,531.44
Board meetings, account of fair		759.20
Assistants and foremen, grounds dept		721.45
Sanitary department		1,495.90
Track work during fair		98.66
Streets, dragging during fair		19.00
Cleaning and prěparing grounds and buildings.		2,052.81
Decorating all buildings and halls		863.65
Payroll Public Safety department		8,895.17
Payroll Admissions department		3,365.15
Payroll Treasurer's department		1,965.75
Payroll Concession department		2,227.50
Payroll Speed department		841.75
Payroll Horse department		1,587.20
Payroll Cattle department		1,152.98
Payroll Swine department		672.20
Payroll Sheep department		441.00
Payroll Poultry department		336.50
Payroll Machinery department		841.60
Payroll Agricultural department		689.90
Payroll Horticultural department		220.71
Payroll Textile and China department		478.96

Payroll Educational and Boys' and Girls' Club department	622.15
Payroll Floricultural department	168.00
Payroll Ticket Auditing department	440.90
Payroll Graphic and Plastic Art department	223.54
Payroll Publicity and Awards department	138.39
Payroll Property Men	226.50
Payroll Boys' Judging Contest	65.50
Payroll Janitor, Administration building	567.00
Payroll Janitors, Women and Children's building	567.00
Payroll Baby Health department	793.00
Payroll Child Welfare and Day Nursery	155.50
Payroll and Expense Program Committee Women and Children's building	499.44
Expense Boys' State Fair Camp	1,958.60
Payroll Dairy and Ice Cream department	1,577.43
Expense Rural School department	25.15
Expense Cow Test Association exhibit	193.79
Expense of Sunday School	98.28
Expense Live Stock Sanitation department	399.70
Expense Wrestling Tournament	395.78
Photographs of 1918 Fair	10.20
Half tones and zinc etchings	21.74
Commission on catalog advertising	277.00
Plants and flowers and gardner	587.62
Freight and drayage	85.24
Calcium chloride for race track	197.85
Government exhibit	1,000.00
Tanbark, Exposition building	78.44
Putting up screens, W. & C. and Administration buildings	35.88
Installing troughs, swine and sheep pavilions	7.22
Building and wrecking auto show annex	172.44
Firemen and coal for dining halls	269.14
Placing and removing amphitheater chairs	184.14
Putting up band stands and stages	34.00
Expense putting floor in Red Cross booth	9.00
Gasoline for autos and camp ground lights	175.28
Miscellaneous labor during fair	3,307.88
Water system, temporary extensions to concessions	210.81
Mechanics repairing locks and turnstiles	162.61
Ring attendants, stock pavilion	71.62
Meals for guests and state day banquet	675.00
Closing buildings	242.15
Typewriter rental	13.85
Cups, medals and engraving	683.09
Rental, tents, cots, bedding, chairs, etc	2,207.60
Forage for various departments	108.25
Laundry, club dining hall and day nursery	14.61
Premium ribbons and badges	1,426.63
Signs for buildings, night shows and exhibits	452.25
Telephone exchange, labor, installing phones	145.69
Annual dues, American Association of Fairs	35.00
Membership, American Trotting Association	105.00
Contribution Showman's League Cemetery fund	50.00
Premium on Assistant Treasurer's bond	62.00
Rent on field reserved for aviation	48.00
Service flag	145.00
Brooms for cleaning barns, walks and buildings	75.75
Toilet paper	342.00

Sweeping compound	26.20	
Mantles for camp ground lights	17.50	
Miscellaneous ground supplies	235.65	
Paper towels	103.85	
Office supplies for superintendents	134.79	
Mimeograph paper and supplies	58.88	
Bunting for decorating	66.61	
Supplies for educational and boys' and girls' club department	71.59	
Total expense of fair other than premiums		$129,739.63

Cash Premiums Paid—

Horses	$ 13,555.00	
Cattle	16,172.55	
Swine	6,881.50	
Sheep	3,402.00	
Goats	77.00	
Poultry	856.50	
Pet stock	41.50	
Agriculture	5,102.50	
Pantry and Kitchen	772.50	
Honey and bees	418.00	
Dairy	642.00	
Horticulture	1,993.50	
Floriculture	1,533.70	
Textile and china	1,035.00	
Graphic and Plastic Arts	648.00	
Educational	1,563.00	
State spelling contest	100.00	
Speed premiums	17,555.88	
Total premiums paid		$ 72,350.13
Total expense of fair		$202,089.76
Grand total disbursements		$256,746.35

SUMMARY OF RECEIPTS AND DISBURSEMENTS AND RECONCILIATION OF ACCOUNTS WITH TREASURER.

RECEIPTS

Cash balance, December 1, 1917		$ 34,822.20
Receipts from sources other than fair		21,213.91
Receipts of fair other than ticket sales	$ 82,884.87	
Receipts from ticket sales	168,311.75	
Total receipts of fair		$251,196.62
Grand total receipts		$307,232.73

DISBURSEMENTS

Disbursements other than fair or improvements		$ 11,667.74	
Expense of fair other than premiums	$129,739.63		
Cash premiums paid	72,350.13		
Total cost of fair		202,089.76	
Cash of permanent improvements and repairs		30,771.08	
Cost of maintenance of grounds and buildings		12,217.77	
Total disbursements			$256,746.35
Balance on hand, November 30, 1918			50,486.38
Warrants outstanding			2,761.55
Cash balance in Treasury November 30, 1918			$ 53,247.93

COMPARATIVE STATEMENT OF TICKET SALES AT OUTSIDE GATES, DAY AND NIGHT AMPHITHEATER AND STOCK PAVILION NIGHT SHOW FOR THE 1916, 1917 AND 1918 FAIRS.

General Admission	1918 Fair			1917 Fair			1916 Fair
	Price	Number sold	Total value	Price	Number sold	Total value	Total value
Outside Gates—							
General Admission	$ .50	162,542	$ 81,271.00	$ .50	177,133	$ 88,566.50	$ 70,784.50
Gen. Adm. after 5 p. m.	.25	24,208	6,052.00	.25	21,135	5,283.75	4,502.75
Children and half fare	.25	34,023	8,505.75	.25	41,360	10,340.00	7,766.75
Des Moines Day Keys							634.00
Camper's Roundup	.50	8,705	4,362.50	.50	6,477	3,238.50	2,736.00
Campers	.40	7,820	3,128.00	.40	7,275	2,910.00	2,830.00
Exhibitors	.36	7,677	2,800.00	.36	9,091	3,318.00	3,326.00
Auto Tickets			9.00			11.20	34.50
Over Cash Turnstiles	5.00	35	175.00	5.00	37	185.00	35.00
Total Paid Admissions		244,965	$106,293.25		262,471	$113,852.95	$ 92,649.50
Day Amphitheater—							
Bleachers or Paddock	$ .25	35,302	$ 8,823.00	$ .25	30,371	$ 7,592.75	$ 4,630.50
Quarterstretch	.25	4,739	1,184.75	.25	3,108	777.00	522.00
Reserved Seats	.50	39,041	19,520.50	.50	38,598	19,299.00	14,929.50
Reserved Box Seats	.75	2,803	2,102.25	.75	2,171	1,628.25	1,633.50
Total Day Amphi.		81,885	$ 31,630.50		74,248	$ 29.297.00	$ 21,715.50
Night Amphitheater—							
Bleachers or Paddock	$ .25	43,090	$ 10,772.50	$ .25	42,173	$ 10,543.25	$ 8,110.00
Reserved Seats	.50	30,262	15,131.00	.50	30,090	15,045.00	11,289.00
Reserved Box Seats	.75	2,255	1,691.25	.75	1,844	1,383.00	1,262.25
Total Night Amphi.		75,607	$ 27,594.75		74,107	$ 26,971.25	$ 20,661.25
Stock Pavilion—Night—							
Reserved Seats	.50	5,491	2,745.50	.50	7,095	3,547.50	3,070.00
Standing Room	.25	191	47.75	.25	522	130.50	43.50
Total Stock Pavilion		5,682	$ 2,793.25		7,617	$ 3,678.00	$ 3,113.50
Total Ticket Sales			$168,311.75			$173,799.20	$138,139.75

SUMMARY

	1918	1917	Increase	Decrease
Outside Gates	$106,293.25	$113,852.95		$7,559.70
Day Amphitheater	31,630.50	29,297.00	$2,333.50	
Night Amphitheater	27,594.75	26,971.25	623.50	
Stock Pavilion	2,793.25	3,678.00		884.75
Total	$168,311.75	$173,799.20		$5,487.45

COMPARATIVE STATEMENT OF RECEIPTS, 1918 AND 1917 FAIRS.

	1918	1917	Increase	Decrease
Horse Department	$ 1,040.00	$ 1,362.00		$ 322.00
Cattle Department	922.50	1,203.00		280.50
Swine Department	1,219.00	1,139.00	$ 80.00	
Sheep Department	188.50	196.00		7.50
Poultry Department	420.00	638.50		218.50
Machinery Department	4,854.50	5,677.65		823.15
Agricultural Department	2,055.03	1,380.00	675.03	
Dairy Department	2,636.50	2,229.70	406.80	
Exposition Department	2,115.00	2,935.00		820.00
Concession Department	36,117.72	33,667.04	2,450.68	
Speed Department	8,192.38	7,904.34	288.04	
Forage Department	10,995.32	14,942.85		3,947.53
Association Special Premiums	8,699.86	7,819.79	880.07	
Adv. in Premium List	1,284.00	1,175.00	109.00	
Adv. in Catalog	1,104.50		1,104.50	
Telephone exchange	238.96	445.63		206.67
Light and power sold	595.85	409.23	186.62	
Miscellaneous receipts	205.25	198.63	6.62	
Ticket Sales—				
Outside gates	106,293.25	113,852.95		7,559.70
Day Amphitheater	31,630.50	29,297.00	2,333.50	
Night Amphitheater	27,594.75	26,971.25	623.50	
Stock Pavilion	2,793.25	3,678.00		884.75
Totals	$251,196.62	$257,122.56	$ 9,144.36	$ 15,070.30

Net decrease, $5,925.94.

COMPARATIVE STATEMENT OF PREMIUMS PAID 1918 AND 1917 FAIRS.

Department	1918	1917	Increase	Decrease
Horses	$ 13,555.00	$ 13,385.00	$ 170.00	
Cattle	16,172.55	15,618.25	554.30	
Swine	6,881.50	6,433.00	448.50	
Sheep	3,402.00	4,039.00		$ 637.00
Goat	77.00		77.00	
Poultry	856.50	1,200.00		343.50
Pet Stock	41.50		41.50	
Agriculture	5,102.50	6,360.50		1,258.00
Pantry and Kitchen	772.50	735.50	37.00	
Honey and Bees	418.00	414.00	4.00	
Dairy	642.00	657.00		15.00
Horticulture	1,993.50	2,086.25		92.75
Floriculture	1,533.70	1,553.80		20.10
Textile and China	1,035.00	1,225.00		190.00
Graphic and Plastic Arts	648.00	648.00		
Educational	1,563.00	1,442.00	121.00	
State Spelling Contest	100.00	100.00		
Speed Premiums	17,555.88	16,544.77	1,011.11	
Totals	$ 72,350.13	$ 72,442.07	$ 2,464.41	$ 2,556.35
Total decrease	91.94		91.94	
	$ 72,442.07	$ 72,442.07	$ 2,556.35	$ 2,556.35

COMPARATIVE STATEMENT OF EXPENSE OTHER THAN PREMIUMS FOR THE 1917 AND THE 1918 FAIRS.

	1918	1917	Increase	Decrease
Executive committee meetings	$ 544.60	$ 887.80		$ 343.20
Special committee meetings	869.01	1,641.79		772.78
Express, telegraph and telephone	374.74	369.64	5.10	
Postage	1,543.84	1,441.60	102.24	
Printing	5,602.21	3,809.01	1,793.20	
Advertising	16,439.61	15,717.84	721.77	
Supplies, stationery, etc.	383.25	412.26		29.01
Music and attractions	23,963.93	21,631.96	2,331.97	
Auto races, prizes and bonuses	6,300.00	4,335.00	1,965.00	
Light and power—current	743.83	829.78		85.95
Light and power—labor	662.27	758.59		96.32
Water	605.68	542.49	63.19	
Refund stall rent, tickets, etc.	259.75	208.25	51.50	
Forage purchased	10,627.73	14,469.05		3,841.32
Salaries, sec'y and assistants	7,531.44	7,109.46	421.98	
Board meetings	759.20	302.10	457.10	
Assts. and foremen, Grounds Dept.	721.45	680.50	40.95	
Sanitary department	1,495.90	1,014.50	481.40	
Track work	98.66	147.78		49.12
Streets, dragging	19.00	660.20		641.20
Cleaning and preparing grounds and buildings	2,052.81	2,088.59		35.78
Decorating buildings	863.65	907.48		43.83
Payroll Public Safety Dept.	8,895.17	4,729.94	4,165.23	
Payroll Admissions Dept.	3,365.15	2,865.50	499.65	
Payroll Treasurer's Dept.	1,965.75	1,504.50	461.25	
Payroll Concession Dept.	2,227.50	2,155.25	72.25	
Payroll Speed Dept.	841.75	765.65	76.10	
Payroll Horse Dept.	1,587.20	1,710.70		123.50
Payroll Cattle Dept.	1,152.98	1,280.79		127.81
Payroll Swine Dept.	672.20	622.25	49.95	
Payroll Sheep Dept.	441.00	483.00		42.00
Payroll Poultry Dept.	336.50	425.89		89.39
Payroll Machinery Dept.	841.60	747.30	94.30	
Payroll Agricultural Dept.	689.90	748.30		58.40
Payroll Horticultural Dept.	220.71	285.19		65.21
Payroll Floricultural Dept.	168.00	132.50	35.50	
Payroll Textile and China Dept.	478.96	453.73	25.23	
Payroll Educational and Boys' and Girls' Club Dept.	622.15	641.50		19.35
Payroll Ticket Auditing Dept.	440.90	392.35	48.55	
Payroll Graphic and Plastic Art Dept.	223.54	212.50	11.04	
Payroll Publicity and Awards Dept.	138.39	110.00	28.39	
Payroll propertymen	226.50	220.40	6.10	
Payroll boys' judging contest	65.50	60.80	4.70	
Payroll janitors Admin. Bldg.	567.00	273.75	293.25	
Payroll janitors W. & C. Bldg.	567.00	610.50		43.50
Payroll Baby Health Dept.	793.00	906.54		113.54
Payroll day nursery	155.50	216.53		61.13
Payroll program committee W. & C. Bldg.	413.44	187.32	226.12	
Expense boys' state fair camp	1,958.60	1,725.81	232.79	
Expense program W. & C. Bldg.	86.00	155.00		60.00
Payroll Dairy and Ice Cream Dept.	1,577.43	1,293.91	283.52	
Expense Acct. Model Sunday School	98.28	60.03	38.25	
Expense live stock sanitation	399.70		399.70	
Expense wrestling tournament	395.78		395.78	
Plants and flowers	587.62	500.92	86.70	
Freight and drayage	85.24	171.26		86.02
Government exhibit	1,000.00		1,000.00	
Water system	210.81	101.30	109.51	
Miscellaneous labor during fair	3,307.88	1,422.95	1,884.93	
Ground supplies	1,132.82	1,019.72	113.10	
Premium ribbons, badges, etc.	1,426.63	1,238.02	188.61	
Rental tents, cots, bedding, etc.	2,207.60	1,347.25	860.35	
Cups and engraving	683.09	566.45	116.64	
Miscellaneous signs for buildings and exhibits	452.25	417.05	35.20	
Fireman and coal for dining halls	269.14	305.99		36.85
All other items of expense	3,300.91	4,056.47		755.56
Total expense of fair other than premiums	$129,739.63	$117,091.31	$ 20,278.09	$ 7,629.77

Increase, $12,648.32.

SPEED DEPARTMENT, IOWA STATE FAIR AND EXPOSITION 1918.

HARNESS RACES

Class	Amount of purse	Amount paid out	Entry fees received	Net cost	No. of starters
*2-year-old trot	$ 500.00	$ 375.00	$ 125.00	$ 250.00	3
2:25 trot	800.00	640.00	192.00	448.00	8
2:20 trot	800.00	640.00	144.00	496.00	6
2:16 trot	800.00	640.00	240.00	400.00	10
*2:14 trot	3,000.00	2,400.00	2,310.00	90.00	12
2:10 trot	1,000.00	820.00	180.00	640.00	5
Free-for-all team trot	500.00	500.00		500.00	4
Free-for-all saddle trot	300.00	300.00		300.00	5
*2-year-old pace	400.00	300.00	76.00	224.00	3
2:20 pace	700.00	560.00	168.00	392.00	6
2:17 pace	700.00	560.00	126.00	434.00	6
*2:14 pace	3,000.00	2,400.00	2,070.00	330.00	10
2:12 pace	700.00	560.00	210.00	350.00	10
2:09 pace	1,000.00	800.00	270.00	530.00	9
Free-for-all pace	1,000.00	685.00	90.00	595.00	2
Free-for-all team pace	500.00	400.00		400.00	2
Total	$15,700.00	$12,580.00	$ 6,201.00	$ 6,379.00	101

*Early Closing Events.

FUTURITIES

Class	Amount of purse	Amount paid out	Entry fees received	Net cost	No. of starters
State Fair Futurity No. 3—(Trotting Division)	$ 1,117.12	$ 1,117.12	$ 417.12	$ 700.00	4
State Fair Futurity No. 3—(Pacing Division)	478.76	478.76	178.76	300.00	3
W. B. Futurity No. 5—(Trotting Division	768.51	768.51	768.51		3
W. B. Futurity No. 5—(Pacing Division)	306.49	306.49	306.49		1
Bonus W. B. Futurity		350.00		350.00	
Total	$ 2,670.88	$ 3,020.88	$ 1,670.88	$ 1,350.00	11

RUNNING RACES

Class	Amount of purse	Amount paid out	Entry fees received	Net cost	No. of starters
State Fair Derby	$ 500.00	$ 500.00	$ 125.00	$ 375.00	5
1-mile dash	200.00	140.00	*	140.00	3
1-mile dash	200.00	200.00	40.00	160.00	4
6-furlong dash	200.00	200.00	40.00	160.00	4
6-furlong dash	200.00	140.00	*	140.00	3
5-furlong dash	150.00	105.00	*	105.00	3
5-furlong dash	150.00	150.00	37.50	112.50	5
5-furlong dash	150.00	150.00	30.00	120.00	5
4½-furlong dash	150.00	150.00	45.00	105.00	5
Officers race	100.00	100.00		100.00	10
4 Roman standing races	120.00	120.00		120.00	8
Total	$ 2,120.00	$ 1,955.00	$ 317.50	$ 1,637.50	55
Total harness races	$18,370.88	$15,600.88	$ 7,871.88	$ 7,729.00	112
Grand total	$20,490.88	$17,555.88	$ 8,189.38	$ $,366.50	167

*No entrance fee charged—first horse received 50%, second horse 20% of purse.

The following table gives the number of exhibitors and the number of entries made in each department of the 1917 and 1918 fairs:

Department	1918		1917	
	No. of exhibitors	No. of entries	No. of exhibitors	No. of entries
Horses	97	1,134	104	1,302
Cattle	166	1,345	141	1,582
Swine	214	2,250	173	2,721
Sheep	25	670	25	756
Poultry	97	1,425	106	1,856
Agriculture	132	1,898	212	2,257
Pantry	136	1,442	183	2,340
Dairy	34	34	91	91
Horticulture	28	700	32	1,301
Floriculture	23	474	30	384
Textile, China, et cetera	160	1,163	287	2,890
Graphic and Plastic Arts	30	97	45	157
Educational	219	873	260	1,555
Implements and Machinery	287		294	
Totals	1,648	13,505	1,983	19,192

The following tabulation gives the number of exhibitors and the number of horses, ponies and mules entered, and the actual number shown at the 1917 and 1918 fairs:

Breed	1918			1917		
	No. exhibitors	No. horses entered	No. horses shown	No. exhibitors	No. horses entered	No. horses shown
Percheron	19	89	67	32	143	121
Clydesdale	7	47	32	14	71	55
Shire	6	30	28	11	45	38
Belgian	16	96	74	15	145	105
Draft	7	19	16	15	36	29
Saddle and Show horses	20	110	*70	19	112	102
Morgans	2	8	8	6	24	11
Hackney	4	10	4	4	8	7
Shetland Ponies	8	101	83	9	93	81
Welsh Ponies	2	15	8	2	16	15
Hackney Ponies and others	3	15	13	7	16	16
Mules	4	37	37	1	20	20
Jacks	3	16	6	2	9	4
Totals	† 97	593	446	† 104	738	604

*Includes all light harness horses, saddle horses, hunters and jumpers.

†Number individual exhibitors.

The following tabulation gives the number of cattle exhibitors and the number of cattle entered by breeds, and the actual number of cattle shown at the 1917 and 1918 fairs:

Breed	1918			1917		
	No. exhibitors	No. cattle entered	No. cattle shown	No. exhibitors	No. cattle entered	No. cattle shown
Short Horn	24	166	115	34	289	251
Hereford	11	151	136	14	158	135
Aberdeen Angus	13	108	75	8	103	89
Galloway	1	10	....	1	12	12
Polled Durham	3	37	37	2	26	24
Red Polled	4	61	30	3	43	41
Holstein	4	60	60	9	117	89
Jersey	2	46	43	7	98	74
Guernsey	6	71	58	2	15	14
Ayrshire	2	47	16	3	61	59
Brown Swiss	....	....	....	1	16	16
Board of Control Cattle	1	40	40	1	44	44
Baby Beeves	95	107	107	56	68	60
Totals	166	904	717	141	1,050	908

The following tabulation gives the number of exhibitors and number of swine entered by breeds, and the actual number of swine shown at the 1917 and 1918 fairs:

Breed	1918			1917		
	No. exhibitors	No. swine entered	No. swine shown	No. exhibitors	No. swine entered	No. swine shown
Duroc Jerseys	53	725	681	61	970	882
Poland China	46	540	479	43	535	485
Chester White	36	530	503	35	490	453
Hampshire	17	405	371	14	280	255
Berkshire	2	2	2	5	55	45
Yorkshire	3	65	51	2	71	61
Tamworth	2	40	38	5	135	127
Mule Foot	2	72	57	2	66	66
Spotted Poland China	4	87	66	6	119	100
Pig Club	49	89	65	....	....	....
Totals	214	2,656	2,313	173	2,721	2,474

The following table sets forth the amount of cash premiums paid

	1918	1917	1916	1915	1914
Horses	$ 13,555.00	$ 13,385.00	$ 14,412.00	$ 17,364.00	$ 18,537.50
Cattle	16,172.55	15,618.25	15,176.00	14,120.00	12,673.25
Swine	6,881.50	6,433.00	4,570.00	4,188.00	4,499.00
Sheep	3,402.00	4,039.00	3,757.00	3,375.00	2,779.00
Goats	77.00				
Poultry	856.50	1,200.00	1,408.00	1,047.00	1,036.50
Pet stock	41.50				
Agriculture	5,102.50	6,360.50	6,803.00	6,672.00	5,398.00
Pantry and kitchen	1,190.50	1,149.50	1,198.50	1,214.50	1,251.00
Dairy	642.00	657.00	652.00	652.00	652.00
Horticulture	1,993.50	2,086.25	1,905.00	1,759.75	1,680.00
Floriculture	1,533.70	1,553.80	1,447.40	1,575.00	1,535.60
Textile and China	1,035.00	1,225.00	1,114.50	1,150.00	1,183.00
Graphic and plastic arts	648.00	648.00	662.00	554.00	561.00
Educational department	1,563.00	1,442.00	1,288.00	1,133.00	931.00
Scholarships			421.84	475.00	425.00
Speed premiums	17,555.88	16,544.77	12,145.17	14,319.50	13,283.00
Dog show					
*Baby health department					
State spelling contest	100.00	100.00	100.00		
Total premiums	$72,350.13	$ 72,442.07	$ 67,060.41	$ 69,598.75	$ 66,424.85

*Cups and medals given in place of cash prizes since 1912.

STATISTICAL STATEMENT OF DEPARTMENT 1901 TO 1918,

Showing Receipts and Disbursements of Iowa State Fair and Other Improvements, Maintenance Grounds and Buildings, Etc.,

	Receipts						Disbursements	
	Cash balance beginning of year	From state fair	From state appropriation	From other sources	Total receipts for year	Grand total	Premiums paid	Other fair expenses
1896	$ 116.79	$ 36,622.10	$ 7,000.00	$ 6,710.22	$ 50,332.32	$ 50,449.11	$ 16,404.29	$ 15,351.06
1901	28,616.55	50,712.91	1,000.00	2,753.82	54,466.73	83,083.28	19,203.83	13,925.87
1902	34,244.93	63,084.71	38,000.00	3,037.06	104,121.77	138,366.70	21,736.31	20,073.34
1903	30,372.25	59,838.56	1,000.00	3,140.79	63,979.35	94,351.60	23,813.13	21,989.56
1904	28,963.11	66,100.36	48,000.00	2,622.03	116,722.39	145,685.50	24,691.68	28,485.42
1905	29,657.23	84,786.25	1,000.00	2,840.92	88,627.17	118,284.49	28,730.89	34,408.62
1906	39,976.34	110,929.85	1,000.00	3,717.16	115,647.01	155,623.35	31,703.94	40,315.60
1907	50,294.87	104,356.75	76,000.00	5,452.34	185,908.09	236,103.96	35,504.79	43,647.20
1908	35,227.90	138,764.66	1,000.00	3,262.95	143,027.61	178,355.51	38,744.56	55,848.65
1909	25,328.73	137,307.40	101,000.00	5,257.42	243,564.82	268,893.55	42,262.76	66,963.12
1910	4,985.25	157,250.77	1,000.00	14,658.30	171,918.07	176,903.32	49,717.50	80,513.68
1911	7,283.44	179,549.67	78,000.00	5,275.72	262,825.39	270,108.83	56,264.35	81,603.16
1912	18,036.99	185,701.21	8,000.00	14,579.82	208,281.03	226,318.02	58,139.15	85,829.74
1913	615.63	188,832.10	30,786.81	17,211.86	236,830.77	237,446.40	61,069.90	85,670.12
1914	18,505.82	188,644.66	51,268.19	32,799.93	272,712.78	291,218.60	66,024.85	104,411.33
1915	968.73	165,604.40	36,666.73	51,949.80	264,220.93	265,189.66	69,598.75	101,561.38
1916	100.63	201,381.96	9,133.27	3,366.59	247,165.32	247,265.95	67,060.41	102,137.45
1917	3,998.17	257,122.56	24,832.25	17,341.11	299,295.92	303,294.09	72,442.07	117,091.31
1918	34,822.20	251,196.62	10,900.00	10,313.91	272,410.53	307,232.73	72,350.13	129,739.63

in all departments of the fair for a period of ten years:

	1913	1912	1911	1910	1909
Horses	$ 15,612.50	$ 14,940.00	$ 14,184.00	$ 10,381.00	$ 7,273.00
Cattle	12,623.00	11,738.00	12,061.00	11,778.00	10,153.00
Swine	4,404.00	4,042.00	3,640.00	4,135.00	3,035.00
Sheep	2,317.00	2,306.00	2,388.00	2,146.00	2,057.00
Goats					
Poultry	1,172.50	1,112.50	1,042.00	1,036.00	988.50
Pet stock					
Agriculture	4,173.00	4,059.00	3,524.00	3,074.00	2,976.50
Pantry and kitchen	1,215.00	1,092.50	856.50	798.00	793.00
Dairy	602.00	627.00	627.00	602.00	596.81
Horticulture	1,614.00	1,139.25	1,115.75	892.00	907.25
Floriculture	1,439.40	1,382.40	1,278.60	945.00	884.20
Textile and China	1,658.50	1,662.50	1,744.50	1,753.00	1,812.50
Graphic and plastic arts					
Educational department	665.00	430.00	493.00	422.00	261.00
Scholarships	650.00	650.00	850.00	1,000.00	1,000.00
Speed premiums	12,620.00	12,360.00	12,310.00	10,755.00	9,190.00
Dog show		318.00			
*Baby health department		280.00			
State spelling contest					
Total premiums	$ 61,069.90	$ 58,139.15	$ 56,114.35	$ 49,717.50	$ 41,927.76

*Cups and medals given in place of cash prizes since 1912.

OF AGRICULTURE FOR YEARS OF 1896 AND INCLUSIVE.

Sources and Expenditures, Together With Amount Expended for and Net Profit of Fair for Each of the Years Enumerated.

	Disbursements				Cash on hand	Profits of Fair		
	Improvements and permanent repairs	Maintenance of grounds and buildings	Disbursements other than for fair	Total for year		Total receipts of fair	Total expenses of fair	Net profits
1896	$ 7,471.95		$ 14,019.88	$ 58,247.28	$ 152.84	$ 36,622.10	$ 31,807.35	$ 4.814.75
1901	13,378.73		2,313.44	48,821.87	34,244.93	50,712.91	33,129.70	17,583.21
1902	63,457.12		2,608.69	107,875.46	30,372.25	63,084.71	41,809.65	21,275.06
1903	17,855.77		1,704.83	65,363.29	28,963.11	59,838.56	45,802.69	14,035.87
1904	59,641.11		3,195.43	116,013.64	29,657.23	66,100.36	53,177.10	12,823.26
1905	11,963.09		3,345.27	78,447.87	39,976.34	84,786.25	63,139.51	21,646.74
1906	30,035.33		3,385.87	105,440.74	50,394.87	110,929.85	72,459.39	38,470.46
1907	16,459.05		5,043.03	200,654.07	35,327.90	104,356.75	79,151.99	25,204.76
1908	53,663.69		4,975.50	153,231.98	25,328.73	138,764.66	94,593.21	44,171.45
1909	150,208.58		4,379.91	263,814.37	4,985.25	137,307.40	109,225.88	28,081.52
1910	24,360.98		14,740.26	169,332.42	7,283.44	157,259.77	130,231.18	27,028.59
1911	109,755.04		4,429.29	252,071.84	18,036.99	179,549.67	137,867.51	41,682.16
1912	71,056.56	$ 6,575.51	4,101.43	225,702.39	615.63	185,701.21	143,968.89	41,732.32
1913	51,110.85	7,313.67	13,776.04	218,940.58	18,505.82	188,832.10	146,740.02	42,092.08
1914	100,649.13	7,564.86	11,599.70	290,249.89	968.73	188,644.66	172,113.92	16,530.74
1915	46,138.60	6,770.91	41,019.39	265,089.03	100.63	165,604.40	171,160.13	*5,555.73
1916	10,547.28	3,432.77	60,089.87	243,267.78	3,998.17	201,381.96	169,197.86	32,184.10
1917	38,773.77	8,284.47	31,880.27	268,471.89	34,822.20	257,122.56	189,533.38	67,589.18
1918	30,771.08	12,217.77	11,667.74	256,746.35	50,486.38	251,196.62	202,089.76	49,106.86

*Loss.

The following is the attendance of the 1918 fair, by days, compared with 1910, 1911, 1912, 1913, 1914, 1915, 1916 and 1917 fairs:

	1918	1917	1916	1915	1914	1913	1912	1911	1910
Wednesday	5,214	6,098	4,871	3,112	4,537	3,849	....	....	....
Thursday	8,346	10,435	9,004	7,610	9,886	8,608	3,090	4,074	....
*Friday	29,713	38,079	30,671	27,722	27,613	33,020	7,503	6,063	4,956
†Saturday	24,573	29,771	29,853	17,158	27,999	26,861	27,957	27,957	30,512
Sunday	20,938	28,719	24,236	14,190	22,200	25,211	18,902	17,612	16,062
Monday	39,089	43,649	46,983	35,085	41,229	58,045	40,602	37,309	25,355
Tuesday	54,434	65,292	59,936	47,501	39,612	66,465	60,379	64,699	52,208
Wednesday	50,876	66,735	49,033	44,103	46,496	40,972	58,643	60,580	57,918
Thursday	67,072	38,351	24,270	31,955	31,523	17,431	38,831	34,117	31,854
Friday	24,122	22,169	13,115	16,630	21,978	....	16,116	18,173	12,368
Totals	324,377	349,298	291,972	245,066	273,073	280,462	272,023	270,082	231,233

*Children's day, 1913-1914-1915-1916.
†Children's day, 1910-1911-1912.

ADMISSIONS TO GRAND STAND, AFTERNOON AND EVENING, 1918, COMPARED WITH 1914, 1915, 1916 AND 1917.

	1918 Fair		1917 Fair		1916 Fair		1915 Fair		1914 Fair	
	Day admissions	Night admissions	Day admissions	Night admissions	Day admissions	Night admissions	Day admissions	Night admissions	Day admissions	Night admissions
Friday	8,090	6,664	9,644	8,509	3,824	6,005	3,237	4,202	3,570	5,243
Saturday	7.265	7,065	5,907	7,279	8,084	6,660	2,164	1,021	5,406	5,921
Monday	11,107	15,101	9,721	15,038	11,432	16,574	8,227	10,328	10,883	9,151
Tuesday	12,938	17,897	13,528	20,182	13,161	16,844	10,001	12,546	7,922	8,018
Wednesday	12,442	16,173	20,502	18,659	10,596	12,533	9,381	11,248	12,927	11,741
Thursday	23,810	17,212	8,713	9,779	3,055	*	6,552	8,450	8,506	7,205
Friday	12,103	....	12,304	....	5,506	....	6,691	....	13,174	....
Totas	87,775	80,089	80,319	79,446	55,658	58,616	46,253	47,795	62,388	47,369

*Show called off on account of rain.

ADMISSIONS TO LIVE STOCK AND HORSE SHOW, IN STOCK PAVILION, 1918, COMPARED WITH 1912, 1913, 1914, 1915, 1916 AND 1917.

	1918	1917	1916	1915	1914	1913	1912
Saturday	899	758	942	484	806	1,042	....
Monday	1,225	2,105	1,581	1,029	957	1,826	1,233
Tuesday	2,035	2,183	2,107	1,580	2,113	2,472	2,265
Wednesday	2,003	2,133	1,501	1,242	1,264	1,566	2,070
Thursday	....	1,091	667	493	605	438	1,262
Totals	6,162	8,270	6,798	4,228	5,745	7,344	6,830

STATEMENT OF INSURANCE IN FORCE ON FAIR GROUNDS BUILDINGS AND DATE OF EXPIRATION

	Fire	Tornado	Premiums	Expiration
General form on frame buildings	$ 58,000.	$ 58,000.	$ 2,320.00	1919
Brick horse barns		10,000.	50.00	1919
Brick horse barns	14,500.	14,500.	425.09	1921
Brick cattle born No. 1	3,000.	3,000.	67.65	1921
Brick cattle barn No. 2	3,000.	3,000.	68.25	1919
Transformer station and contents	2,000.	1,000.	43.00	1919
Women and Children's building	15,000.	15,000.	367.50	1920
Agricultural building	10,000.	10,000.	250.00	1920
Administration building and contents	20,000.	15,000.	435.38	1920
Stock pavilion	15,000.	15,000.	378.69	1920
Machinery hall		15,000.	75.00	1920
Swine pavilion		15,000.	75.00	1919
Grand stand		10,000.	95.00	1919
Farm house	1,500.	1,500.	21.87	1919
Farm barn	500.	500.	7.13	1919
Brick dining halls	4,000.	2,000.	110.00	1921
Street car station		2,000.	10.00	1919
Sheep barn		13,000.	39.00	1919
Wilkin's house	800.	800.	12.00	1920
Total insurance	$147,300.	$204,300.	$ 4,850.56	

REPORT OF TREASURER, W. W. MORROW, AFTON, IOWA.

Mr. President and Gentlemen of the Convention:

In accordance with the wishes of the State Board of Agriculture, I herewith present a report of receipts and disbursements for the fiscal year ending November 30, 1918.

Balance on hand December 1, 1917.................. $ 35,115.69

Received from sale of tickets and cash turnstiles as follows:

	Cash turnstiles	$ 55,760.75	
67,818	general admissions, 50c tickets	33,909.00	
8,787	general admissions after 5 p. m., 25c tickets	2,196.75	
15,885	children and half fare 25c tickets	3,971.25	
8,705	round-up 50c tickets	4,352.50	
7,820	campers, 40c tickets	3,128.00	
35	auto tickets for week at $5.00	175.00	
35,292	day grandstand (bleachers 25c)	8,823.00	
4,739	day grandstand (quarterstretch 25c)	1,184.75	
39,041	day grandstand reserve seats, 50c	19,520.50	
2,803	day grandstand, box seats 75c	2,102.25	
43,090	night grandstand (bleachers 25c)	10,772.50	
30,262	night grandstand (reserve seats 50c)	15,131.00	
2,255	night grandstand (box seats 75c)	1,691.25	
5,491	night stock pavilion (reserved seats 50c)	2,745.50	
191	night stock pavilion (standing room 25c)	47.75	
1,400	exhibitor's tickets @ $2.00	2,800.00	
	Total ticket sales		$168,311.75

Received from Secretary and Superintendents as follows:

Secretary's Department:

Fees stallion registration division	$ 6,981.00	
State appropriations	10,900.00	
Interest on account	789.72	
Miscellaneous receipts other than fair	1,230.18	
Superintendent of grounds	1,313.01	
Superintendent horse department	1,040.00	
Superintendent cattle department	922.50	
Superintendent swine department	1,219.00	
Superintendent sheep department	188.50	
Superintendent poultry department	420.00	
Superintendent machinery department	4,854.50	
Superintendent agricultural department	2,055.03	
Superintendent dairy department (ice cream sales	2,636.50	
Superintendent exposition building	2,115.00	
Superintendent concessions and privileges	36,117.72	
Superintendent speed department	8,192.38	
Sale of light and power	595.85	
Sale of forage	10,995.32	
Association special premiums	8,699.86	
Advertising in premium list	1,284.00	
Advertising in official catalog	1,104.50	
Miscellaneous receipts of fair	444.21	
Total receipts other than ticket sales		$104,098.78
Grand total receipts		$307,526 22

DISBURSEMENTS

Expense warrants paid	$182,050.75	
Premium warrants paid	72,227.54	
Total disbursements	$254,278.29	
Balance on hand November 30, 1918	53,247.93	
To balance		$307,526.22

Respectfully submitted this 11th day of December, 1918.

W. W. MORROW, Treas.

December 1, 1918.

To the Directors of State Board of Agriculture:

Gentlemen: This is to certify that there was on deposit in the Central State Bank on November 30, 1918, to the credit of W. W. Morrow, Treasurer of the Iowa Department of Agriculture, the sum of $53,247.93.

Yours very truly,

GRANT McPHERRIN, Cashier.

The President: I will say the reason we do not have an auditing committee to go over the accounts of the secretary and treasurer is that the law makes the Department of Agriculture a state institution and as such the state accountant audits the books and makes a report to the Executive Council of the state. He has just gone over the accounts and filed his report with the Executive Council.

The President: Yesterday on the program of the County Fair Managers' Association, we were to have had a paper by Mr. E. J. Curtin of Decorah, but unfortunately Mr. Curtin was not very well and could not appear at that time. I am satisfied most of the members who were at the meeting yesterday are here this morning, and as Mr. Curtin is here now we should be pleased to have him read his paper at this time. The subject of Mr. Curtin's paper is "What Position Should the State Fairs Take Towards the Proposed Horseman's Protective Association?"

E. J. Curtin, Decorah.

Mr. President and Gentlemen: I will say in this connection that this is not the paper that I was to prepare for the meeting yesterday. I was to prepare a paper on the subject of state aid not being permitted those who did not send a representative to this meeting, but in Chicago last week I read a paper to the American Association of Fairs and Expositions on the subject of the fourteen points of the Horsemen's Protective Association now being formed, and I was asked to substitute that for the other one. However I was ill yesterday and could not give it. I will explain this paper by saying that this relates entirely to the state fair work, although it does apply to the county fairs in the same way, and that is why in all the references you will find the words "state fair" used.

WHAT POSITION SHOULD THE STATE FAIRS TAKE TOWARDS THE PROPOSED HORSEMEN'S PROTECTIVE ASSOCIATION?

BY E. J. CURTIN, DECORAH.

Mr. President and Gentlemen: No doubt, you have all heard, that wherever horsemen have gathered together at fairs or race meetings, during the past season, the subject most discussed by them has been the question of forming a Horseman's Protective Association to look after their interests. Most of them will tell you that they do not get justice from the parent trotting associations, and that the charges imposed on them by the railroads, feed men, draymen, and also by secretaries themselves, in the way of entrances and suspensions, are unjust; and could be materially reduced if they were organized. One of their principal claims is that they furnish the show, race for, in large part, their own money, and the fair people keep the profits. Then, if a little bad luck strikes them and the horse goes lame, or shows he cannot win, after being entered, and does not appear, their claim is that their horses are always suspended by the associations and they are compelled to pay. On the contrary, if the association figures that the next day is going to be a poor one, and the crowd small, it can save itself from possible loss by declaring off the next day's races, claiming that the track would not be safe, or giving some other excuse, and there is no redress for the horsemen. He will tell you he may have shipped his stable there, a distance of several hundred miles, and has been under heavy expense for the week, with no chance to race and earn anything but all he can do is to submit, and move on to the next town. I have heard these complaints, and many more, at every race track I have visited this season and for several seasons past, and am not surprised to learn that a call has been issued to the people that own and race harness horses, to meet here in Chicago on Wednesday, December 18th, to discuss the advisability of forming a Protective Association.

This call was issued November 1st, and contains the following: "14 points," and its declarations are as follows:

THE 14 POINTS.

1. No more racing for the horsemen's money.
2. No more entrance money unless it is added to the purse.
3. No deductions from money winners.
4. No more declaring off when there is one horse ready to start.
5. No more penalizing of a good horse by splitting the purse.
6. No more 5% to enter and 5% from money winners.
7. No more entertaining the public without fair compensation.
8. No more robbery by draymen.
9. No more robbery by feed men.
10. No more robbery and inconveniences by railroads.
11. No more leaky and unsafe stalls.
12. No more penalizing by parent Trotting Associations without representation.
13. No more drunken grooms and drivers.
14. No more unorganized sport.

With your permission, I will take these up in the order in which they are presented.

No. 1. "No more racing for the horsemen's money." If point Number 2 is approved, it is obvious that there would be no force to point Number 1.

No. 2. "No more entrance money unless it is added to the purse." I think that a large majority of the members of the association present here today will agree with me that harness racing is the greatest single attraction that they have to offer their patrons. That it is the one thing that continues to interest, from year to year, and that were amusements of different kinds to be dispensed with at fairs, harness racing would be the last to go. I do not believe that this statement warrants any discussion, or needs any proof, to the minds of the practical fair men in front of me, so with your permission, I will start from the basis, that you wish it retained. Harness racing for the past few years has been undergoing a very great change. Until perhaps ten or fifteen years ago, the average owner, when getting his stable ready for the campaign, laid out his route along what might be termed, the "lines of least resistance." He planned what is termed an "educational campaign," and this consisted in going along as quietly and easily as possible, keeping his horse under cover, and avoiding a record.

Finally, when the horse was supposed to be ready to win, the plan was to start him at a town where the betting was brisk, and win enough in one race to pay, practically the entire summer's expenses and a substantial profit. In those days, the entrance fees of 10% were lightly considered as part of the incidentals, and if the "killing" came off as expected, there was money enough to go around anyway. If it did not, the owner generally had some business at home that could pay the bills, and he passed it off as best he could and hoped for better luck next time. This was in the day when a large percentage of the race meetings and fairs permitted betting, and when harness horses were considered by their owners, primarily as betting propositions, and incidentally as purse winners. Year by year, we have seen laws enacted that put out of business the fairs, and race meetings, where betting played a prominent part; so that now, out of the 1,050 towns and cities that gave harness races in 1918, about 1,000 of them operated without betting, while less than 50 continued it. This, naturally, makes a complete change in the program of the average horse owner. He is compelled to race for purses almost exclusively. No "educational campaign" for him. He must get his horses ready to start as soon as possible, and try to win with them whenever they do start. There is no "killing" to be pulled off after awhile. It is a matter of purses entirely, and when racing for purses, the expense account must be carefully looked after. The entrance fee is one of the largest items of the expense account each week. On top of salaries, board, feed, drayage, freight or express charges, and other expenses, which have more than doubled in the past ten years, the entrance fees have remained practically stationary, while the purses offered by the state fairs of the middle west have grown less. The average owner cannot stand the gaff only about one season. He may love the sport, and be game and willing, but if the expense is continually larger than the receipts, he has to quit sooner or later. If he gets disgusted and quits, as many an owner does every fall, and consigns his horses to the winter auction, he finds there also, that a great change has occurred. He finds that the harness horse that is not good enough to win, has no home. Ten years ago, he would be bought as a road horse at a price that would help a little, in reducing the soreness in the owner; but not now. Henry Ford has appeared on the scene, and with his little tin lizzie has driven the poor horse off the road. Consequently, a horse has no value unless he can win. Very few can win, so the great majority sell for little or nothing, and several more owners are lost to the sport.

A few years ago, a survey of harness horses was made, and from the best available information, it was estimated, that about 50,000 horses were started into training, in the United Staes, by April 1st of each year. 20,000 of these were either colts, to be handled temporarily or horses that did not show promise enough to warrant continuing their training, and they fell by the wayside in the first month. About 30,000 started the repeating process, but 10,000 of them failed to show quality enough to justify continuing their training through June. By that time, another 10,000 went lame and got sick, or trained badly, or suffered some of the thousand and one ills which horseflesh is heir to, and that left 10,000 harness horses to to get to the races. Now listen: **Out of the 10,000 horses that started out to the races, 500 paid their expenses.** As a business proposition, for an owner, it certainly is not alluring. I have made a tabulation of the amounts paid for harness racing by the state fairs of the Middle West, the past year of 1918, and 10 years ago, 1908. I find that the average purses were less this year than ten years ago.

Town	Year	No races	Amount of Purses	Average Purse
Sedalia	1908	13	$ 9,200	$ 707
	1918	13	11,500	884
Springfield	1908	15	14,400	960
	1918	17	16,200	952
Des Moines	1908	11	9,000	818
	1918	20	18,300	915
Hamline	1908	13	28,800	2,215
	1918	15	18,200	1,213
Milwaukee	1908	16	29,000	1,812
	1918	14	22,100	1,578
Lincoln	1908	14	9,500	678
	1918	13	11,200	861
Huron	1908	9	4,300	477
	1918	12	10,960	913

1908—91 races, purses amounted to $104,200. Average purse $1,145.
1918—104 races, purses amounted to $108,460. Average purse, $1,042.

From the above, it can be seen, that opportunity to earn more money is denied an owner by the lessening of purses, while the expenses connected with owning and racing horses, have more than doubled. This every one knows. The best informed fair managers now regard harness racing as a vaudeville act, pure and simple. It is nothing else, and if so, it is the only vaudeville act, which after being purchased at a certain price, permits the fair manager to deduct a certain percentage, either 3% or 5%, for each actor employed in the act, and then takes 5% more from the salaries of each of the four best actors in every act, after the act is finished. I fancy I hear Mr. Fred Barnes talking it over with the fair manager that attempted to do this to him. Yet this is done to every horseman, by every secretary, at every fair, held in the United States. I feel that point Number 2 is well taken, and that if we of the state fairs, wish to continue to have harness races as part of our attractions we will have to abolish the entrance fee and deductions, or if we exact an entrance fee add it to the purse. I understand Mr. McIlvaine did abolish entrance fees at the South Dakota state fair this year, and that he is very well satisfied with the result. As he is present at this meeting, I am going to ask him to give his views on the subject, later in the day.

No. 3. "No deductions from money winners." There never was any excuse for an association's taking money away from a horse after he had earned it. It simply is a relic of the old days, when the entrance fee was customarily 10% to enter. After awhile, owing chiefly to competition between associations, this was changed to 5% entrance, but 5% was also deducted from each of the four money-wnners. This made a reduction in the advertised purse of 20%, and that meant that when an association offered a $1,000 purse, they really only paid out $800, as the 5% that they deducted from each money winner cut it down to that. This is a form of "camouflage" that should never have been permitted, and I thoroughly agree with the horsemen on this point.

No. 4. "No more declaring off when there is one horse ready to start." This would not be fair to the associations. The association offers purses for the purpose of attracting entries to compete before its grandstand and entertain the public that has paid admission. One horse going around the track at any gait his driver saw fit, would be anything but pleasing to the grandstand patrons, and if two horses are not on hand ready for the word, that race should fall of its own weight. In the final analysis, it is the public that pays the bills, and it must be pleased or racing will stop. I think the horsemen should cut out this point.

No. 5. "No more penalizing a good horse by splitting the purse." I know of no rule of either of the trotting associaions compelling this. It is only done by agreement between the association and all the owners having entries in the race. This is more usually asked for by the horsemen themselves, as they think their chances of earning money are better when the fields are not so large. This is an unimportant matter anyway, as the occasions when it occurs are very few in the season. It should not be dignified as a point.

No. 6. "No more 5% to enter and 5% from money winners." This is only a repetition of Point No. 2, and should be eliminated.

No. 7. "No more entertaining the public without fair compensation." If Point No. 2 is upheld, this should be stricken out. There is plenty of money offered for harness racing if the expenses connected therewith could be reduced. No one is competent to say what "fair compensation" is. It all depends. There are horses that are not good enough to win $300 purses, that can win $100 ones. On the other hand, there are horses that can win $5,000 or $10,000 purses, and others that cannot win these, but can win $1,000 ones. This is a free country, and everyone should be allowed to use his own judgment, as to where his horse shall be entered. My experience has been that it does not take long to cure an owner of starting his horse in a $5,000 or $10,000 purse, when his capacity is not above a $1,000 one. The expense account will soon tell him where he belongs.

No. 8-9-10-11-13.
No. 8. "No more robbery by draymen".
No. 9. "No more robbery by feed men".
No. 10. "No more robbery and inconvenience by railroads."
No. 11. "No more leaky and unsafe stalls".
No. 13. "No more drunken grooms and drivers".

None of these matters should have been included in the call for the Meeting. They are too general and in a way "cover too much territory." If Point No. 12 which I have purposely skipped and will take up in a few moments is adopted, it would be an easy matter to take care of the matters included in the above five points as far as possible.

Speaking of "covering too much territory" reminds me of a story I heard relative to President Wilson's famous "14 points".

A friend of Premier Clemenceau of France came to him at the time our president enunciated his famous 14 points or commandments to the world, and asked him what he thought of them. "Fine", said the Premier; "Fine". "But don't you think," said the friend, "that he has gone pretty far in some of them?" "Don't you think that he is covering considerable territory in proportion to the part that America has taken in the war?" "Well now," said Clemenceau, "perhaps he has, perhaps he has. Now that you mention it, I do recall that he is a little strong. Christ you know only made ten". Now that is the way that these five points strike me.

No. 12. "No more penalizing by the Parent Trotting Associations without representation." I think this is a very vital point, and one that has more force than any of the others. This is an age of Democracy, and one of the most important subjects to be worked out at the peace table in France is that "Government of the people must be by consent of the governed". This rule should apply in the harness world. As now constituted, the sport is governed by the representatives of the tracks only. This is not right. It has been continued so long in this unjust way that little thought is given to it. Any fair-minded man can see that the interests which go to make up the personnel of the sport should be represented in its management. I think that the American Association of Fairs and Expositions should go on record as favoring such changes in the By-Laws of the Parent Trotting Associations as to permit of the election of at least three members to serve on the Board of Appeals of each of them, by the Horseman's Protective Association.

These members to be elected by them and certified up to the Parent Association. These to be in addition to the directors now elected by the representatives of the tracks. It would be a great step in advance in my opinion, as it would stop the continual grumbling, make for fairness, and put all interested parties in a position to do what they could for the benefit of the sport.

No. 14. "No more unorganized sport." This is not fact. The sport is organized but it is organized by the tracks only. They have two parent organizations, but owners or drivers are not admitted as members. Only owners of tracks are and they make the laws and rules governing. If the suggestions noted under Point 12 are adopted, this would round out the organization in a proper way. As perhaps most of you know, I have charge of the racing at the Iowa State Fair at Des Moines, and so am more familiar with conditions there than at any other of the state fairs. For our 1918 fair, we contracted for vaudeville acts and music to the amount of $14,036. These acts appeared in front of the grandstand each afternoon, same as the harness horses. At the conclusion of the fair we paid their managers the $14,036 as agreed. Now, how about the harness races? We advertised in the horse papers to give stakes and purses aggregating $18,370. They all filled and the races were contested each afternoon on the track in front of the grandstand. Then what happened? Instead of paying the $18,370 in full, as we did for our other vaudeville acts, we deducted 5% from each of the first four horses in every race. This made $2,270 and cut the amount for us to pay out down to $15,600. Then we charged each horse that started in a race 3% of the amount of the purse he started in, and this amounted to $7,871 and cut down the amount we were to pay out that much more, or to $7,729. In other words we offered for harness races $18,370 and only paid out $7,729, while for music and attractions that performed at the same time before the grandstand, we offered $14,036 and paid $14,036. To show that we can well afford to pay for racing I will state that our day grandstand alone during the 1918 fair took in $31,630, which is a good deal more than the entire cost of music, vaudeville and racing. On a rainy day, when no racing can be given, our grandstand is a lonesome place. We have the bands playing and the acts going on all the time, but the small receipts show, in no uncertain way, that it is the racing that fills it to overflowing. To give you an idea of how little money the owner of a harness horse really gets for his work I will say that at Des Moines this year there were 140 harness horses on the grounds. They did not all start on account of lameness or lack of condition, or something of that sort, but if every one of the 140 horses that had been shipped in there had started and earned his proportionate share of the amount we paid out for racing, $7,729, he would have received the magnificent sum of $55.20. All that owner would have had to do, out of that $55.20, would be to pay a week's salary to both his driver and his groom, board them as well as himself for a week, buy feed, hay and straw for the horse, pay a drayman for hauling him in and then hauling him out, pay for repairs on his boots and harness, pay for repairs on a broken sulky wheel that gave out when he was run into over at the other town. After that, if no other incidental expenses showed up, he could pay for shipping the horse on to Hamline by express and, in addition, pay three railroad fares from Des Moines up there for the driver, groom and himself. The rest of the money would be his. Can you understand why there is a different crop of owners each year?

In conclusion, I wish to say that I think we should give this proposed association a helping hand and ask the parent associations to give them memberships on their boards. I think that if harness racing is to continue we will have to divide the burdens more equally where they belong. If it is a vaudeville act, and I contend that it is now nothing more, we must pay for it as we have been doing for the rest of our vaudeville by cutting out the entrance fees and deductions from money winners. If we don't want it, we can continue along the same lines as at present and it will fall of its own weight. The great majority of harness horsemen are people of moderate means and the rise in prices of everything used in connection with harness racing has almost put them out of business. Racing should be paid for in full out of the gate and grandstand receipts as is the rest of our vaudeville. All state fairs have been unusually successful and profitable the past few years and, as we all want harness racing and, in fact, must have it, I think we should first of all support this new horsemen's Protective

Association. Then cut out the entrance fees and deductions and put racing on the same basis as our other vaudeville acts. Make out our budget during the winter months of the amount we want to put into harness racing and then go ahead and advertise it and pay for it. A few years ago the thoroughbred horse interests were in the same condition as the harness horse interests now are. Horses cheap, owners broke, racing on the decline, and the industry in a generally run-down condition. Several of the leading thoroughbred owners got together and organized the Thoroughbred Horse Association, and its results have been most happy. I do not suppose that the organization of this association alone has made the thoroughbred horse business so prosperous, but it has added to it in no considerable degree and has kept thoroughbred racing from dying out. I thank you very much for the consideration shown me in my taking up so much of your valuable time here today and, with your permission, I will now close by reading you a copy of a letter I recently received from Mr. Thomas B. Cromwell, of Lexington, Kentucky, Secretary of the Thoroughbred Horse Association and which explains itself.

THOROUGHBRED HORSE ASSOCIATION, Inc.
20 Hernando Building

Lexington, Ky., Nov. 22, 1918

Mr. E. J. Curtin,
Decorah, Iowa.

Dear Sir: Answering your letter of Nov. 19, I am sending you a copy of our Articles of Incorporation and By-Laws. You will see by these that we are a non-profit-taking organization. Our dues are $10 annually and we have at present two paid officers, a secretary and race-track representative. We have attained a wonderful measure of sucess during the nearly three years we have been organized. We have assisted in the enactment of laws beneficial to racing; have prevented the enactment of laws prejudicial to racing, all through exercising influence properly brought to bear and at no time by the use of money.

We have not had, at all times, the cooperation of the Jockey Club and State Racing Commission. The bodies, composed in the majority of race-track stockholders or men leaning to the race tracks, rather than to the side of the horsemen, at the outset combatted the organization and refused to take membership, but now they seem to recognize the bolstering influence and some have admitted it was a mistake to have regarded us as hostile.

I am constrained to believe that such an organization as we have, if formed on the trotting turf, would result in the improvement of your racing organization and in the betterment of conditions in general.

Hoping that this will be of assistance to you and assuring you of my willingness to cooperate with you at all times, I am

Very truly yours,
Thos. B. Cromwell, Sec'y.

The President: Gentlemen, we have with us this morning the governor of the great agricultural State of Iowa, whom I know to be personally interested in the things that you are interested in, so I take pleasure in introducing to you Governor W. L. Harding, of Iowa.

Hon. W. L. Harding.

Mr. President and Gentlemen: I am glad that I came in just at the moment I did—I learned something new. I never had understood before that a man who owned a race horse had to eat—

Mr. Curtin (interrupting): Only in the spring and fall.

Mr. Harding (continuing): —and I thought even less that a man who owned a race horse should actually be paid. It is a new and startling idea. As I understand it, I am, as governor of the state, a member of this organization, I don't know whether the same punishment is assigned to every member of the State Board of Agriculture that is assigned to the governor—that is, to make, or try to make, a speech every year at the annual meeting; but I assume that the membership suffers more than the governor does under this particular part of the program.

I was not privileged to attend the state fair except on two occasions this past year. Duties over which I had no control called me to Washington, and I took Dean Curtiss along with me. He got away one day earlier than I did, so that I attended only on the last day of the fair.

I feel that a state fair is one of the great educational institutions of the state, and it fills in a place that is vitally important. It ought to be encouraged; it ought to be continued. That is not a new thought to any of you. You all agree with me about that, but it is a good thing once in a while to sit down around the table and talk over the things that we agree upon.

Since the war has been on, we have realized more and more the importance of the farm. We discovered that without food it was impossible for our armies, or those of our Allies, to do the work that we expected them to do and to win victories. We discovered also that there is wonderful disorganization in that particular line of industry. In the past we have thought that the farmer could be an individual, isolate himself from the community if he wanted to; that it wasn't any part of the public's business what he did with his land, and I think that the war, the necessities of the war, have opened our eyes to this fact; that the farmer who has under his management and control a piece of land has certain duties and obligations to the community, and the community has certain duties and obligations to him. Now, if that one thought can be driven home to all people, it will be marvelous what we will do in the next few years.

During the period of the war, the increase in oats, barley, corn, wheat and rye in Iowa was 27 per cent over the average for the ten years previous to the war. Fifty thousand men taken out of the State of Iowa, from the farms, and more, including laborers, and yet that increase was brought about. What did it? It was co-operation. The Farm Bureau, the county agent, the agricultural college, the extension department, all working together, and all working with the farmer, and the farmer working with them, resulted in increasing the production of the state in those lines 27 per cent. Somebody may rise up and say that Nature helped with a good year, or something of that kind. There may have been something to that, but we do know that with a decreased man-power the production was increased that amount, and I am satisfied that it was co-operation among these two—that is, the farmer on the one side and the various state institutions on the other. And in that list I should include the agricultural society, because we had very able assistance from the association, and especially from the secretary in the seed-corn campaign that was put out.

Now, we have some wonderful herds of cattle, horses, hogs, sheep, and so on, in Iowa, but they are all owned individually. It takes some money, as you can testify—a large amount of money—to carry on one of those lines of industry. I think a move that ought to be started in the State of Iowa, and that would be very helpful, would be to organize the community, let the state step in if she wants to with a little money, and let the community buy a good bull or a good stallion and start a strain for that community. The community could then start doing what the individual has been doing, instead of having a few individual herds scattered throughout the state that are good, and a lot of herds that are mighty poor, or a lot of farmers that have herds that do not amount to anything, we would build up a standard in the state and establish a reputation of having something to sell, that would bring money and greatly improve the conditions. New ideas of that kind have to start some place. Land is selling now all the way from $200 to $400 an acre in Iowa. If we are going to get returns from that land, we have got to get a better price for the stuff we sell, and we have got to get more stuff to sell off of the same acres of land. It is not the work of an individual to do that alone, it is a community proposition. It is a matter that the state is interested in. I don't mean for the state to reach out and put its strong hand upon it, but I do mean for the state to have a guiding hand in the transaction.

Just now there is a national effort on to take the soldier, the returned soldier, and put him on the swamp land or the cut-over land that is scattered over the country. The general program thrown out by the Interior Department is for the state to furnish the land, the federal government to furnish the money, to finance the deal and the soldier to be put on this land and reclaim it. Personally, I can't quite understand why they should pick on the soldier in that way. I don't know what he has done that he should be so punished. What little information I have about our swamp land, or land that is to be drained, I find it takes from five to ten years after you get the water off before it will really produce. At least, there are a number of years intervening. Now, why we should take the soldier and put him on swamp land or cut-over land and ask him to stay through those years of pioneering, I am unable to understand. I know this, that if a program of that kind is followed out, it means that Iowa is going to suffer. If the War Department will let us have our boys back in Iowa, there is a place for every one of them, either on the farms or in the factories or in the businesses of this state. We have the resources! It is a matter that needs serious and careful consideration. We want to do for the soldier, but we ought not, it seems to me, to insist that he should be the man who pioneers in reclaiming swamp lands or waste lands. Personally, I am of the opinion that it is not so much now a problem of getting more lands under cultivation as it is to have the land that is already under cultivation better cultivated, the soil conserved, and education in those various things which will increase production. I believe that is the immediate problem before us. There is danger in scattering too much.

Now, I don't know whether those thoughts are of any value to this body of men, but I know that they are going to be up for consideration in the near future. I know that you are leaders in your communities and that they must have intelligent discussion and consideration or a state like Iowa will suffer.

I am not familiar with the details about the management of a fair. All I know about the state fair is I drive up to the gate and, being an "ornery" member, sign my name on a piece of card board, and drive to the place for my car, if somebody hasn't got in before me. I can go about if I have the time to spend every day at the fair, and find something new every minute of the time.

I visited a good many county fairs and district fairs in the past three or four years. I would see throngs of people everywhere, touching elbows, competing in a friendly way for prizes, showing the best they were able to produce. I think it is an institution in the community and in the state which lifts us up. The banker, the manufacturer, the farmer, all meeting together, looking at the same things, going away with a bigger vision of the possibilities of a state like Iowa than when they came; and what Iowa needs more than any other one thing is a vision of what lies just beyond. There is not a spot of earth in all this world that has the possibilities for the building of a civilization like Iowa. The soil is rich, climatic conditions are favorable, and the people are willing and able to respond to the call. Iowa can lead the nation and the world, We have led in war activities; we can lead in business activities, and I commend you men in the work of planning for the next fair—not alone for the next one, but for the next ten years—that you tilt your spectacles high and look beyond for this institution is going to live and is going to bring results to Iowa far beyond your fondest expectations. I congratulate you as individuals who have a part in these fair association managements, and I think I can understand that sometimes just at the close of a fair you will say "Is the whole thing worth while? Is all this hurry and hustle and worry and labor worth while?" And sometimes you answer it in the negative, but you are mistaken when you answer it that way. It is worth while; it is worth while to get the people together and lead them out away from themselves and develop the community spirit, and we need to know that we are dependent upon the other fellow, and if we can keep that thought, which has been so well developed during the war, clearly in the minds of all our people, the strides we will make in the next ten years will be beyond the vision or the guess of any man here present.

It is a pleasure having this opportunity of meeting with you. I know from what has happened in the past that the planning for tomorrow will be successful. I thank you.

The President: We will now listen to the report on the final crop estimate for 1918 by Charles D. Reed, Director of the Iowa Weather and Crop Service Bureau.

FINAL CROP REPORT OF THE STATE, 1918.

By C. D. Reed.

The winter of 1917-18 was one of the coldest, averaging 5.4° below normal and only 0.5° warmer than 1892-93, the coldest of record. Snowfall averaged 3.4 inches more than the normal and because of the continuous cold weather and the absence of sleet and rain the snow covering was generally porous and continuous, except in some west and southwest counties. Winter wheat, except where seeded in cornfields, was generally blown bare of snow.

March was abnormally warm with deficient precipitation, except in the northern tier of counties. Frost left the ground early in the month; the soil worked up in fine condition; seeding of spring wheat and oats was completed in the south and made rapid progress in the north portions; and husking of the 1917 corn crop which had been delayed by the soft condition of the corn and by the severity of the winter, was about finished. Winter wheat came through the winter in good condition, especially in the southeast counties. Some that had apparently not germinated in the fall of 1917, germinated in March and, though there was considerable difference of opinion among farmers and others as to whether this would make a crop, it is now known that in many instances it did make a crop of 15 to 25 bushels per acre. The drouth of March continued till the middle of April, except scattered showers or snows during the first week. The drouth, high winds and low humidity killed much of the winter wheat and young clover, timothy and alfalfa. On March 18, a number of stations reported the lowest relative humidity ever recorded. At Des Moines it was 5 per cent at 2 and 3 p. m. A large acreage of winter wheat, hay and pasture land was plowed up. Considerable early spring wheat was drilled in with the winter wheat where the stand was thin and patchy.

Iowa's hay and pasture land was decreased by about three quarters of a million acres, the acreage of other crops, mainly spring wheat and barley, being correspondingly increased. The acreage of spring wheat would have been much larger if sufficient cars had been available to transport the seed. The dry weather of the early spring and the cold weather of April made germination of spring grains very irregular. They depended largely upon subsoil moisture till the middle of April. Warmer weather with copious showers toward the close of April improved grains; some that had been selected six weeks previously had just begun to show green at the end of the month. A heavy snowstorm extended across the State from southwest to northeast on April 19th-21st. In Taylor County this snow accumulated to the ususual depth of 2 feet or more, exceeding the total fall of the winter months preceding.

Favorable weather for work offset the unfavorable labor conditions. Spring work progressed rapidly. Eighty-five per cent of the corn ground was ready for the planter and a little planting had been done by the close of April. Seed corn was scarce and of very low vitality due to the lateness of the crop and the damaging frosts in 1917. Unprecedented efforts of county agents and farmers in seed testing, and cautious delay in planting most of the acreage after the ground was warm and the weather fit, resulted in good stand of corn.

Violent temperature fluctuations, from freezing to 95°, May 1st to 4th, with high southwest winds and low humidities, did further damage to winter wheat and grasses. Tornadoes May 9th and 21st covered considerable areas but did little damage to crops. Soil and weather conditions in May were very favorable for germination and growth of corn.

Heavy rains the first week in June caused considerable damage to corn by erosion and overflow, from Webster and Hamilton Counties southeast to Poweshiek and Johnson Counties. Replanting from this cause was probably not greater than usual for the State as a whole, but because of the large acreage of spring plowed sod, the cut worm damage and consequent replanting from this cause was unusual. This replanted corn was about all that was caught by the early frosts, September 18-21. The soft corn which is 4 per cent of the crop, is a fairly good indication of the extent of this replanting. Seventeen counties, mostly in the southwest, reported no appreciable amount of soft corn, while the northeast counties reported considerable.

Reports from many hundred crop correspondents on July 1, showed the average condition of corn to be 105 per cent, which has been exceeded but once in 29 years. A hot period about the middle of June with record high temperatures on the 16th was believed to have prematurely ripened oats in the southwestern one-fourth of the State. Such a period is not considered good for any small grain, yet all.small grains finally show yields above normal. Smut affected spring wheat seriously.

Harvest came on about a week earlier than normal and continued through July under conditions unusually favorable for labor and curing shocked grain, except in the northeast and north-central counties where heavy rains caused delay and damaged the shocked grain.

During July a marked deficiency in rainfall began to be felt over the south-central and southwest counties, causing the pastures to fail and upland corn to begin firing. The average condition of corn on August 1 was 101 per cent. In the next eight days, record breaking high temperatures with drouth damaged corn throughout the southwest one-third of the State, amounting to a disaster in some of the southwest counties. In Adams County where the heat and drouth were greatest, the average yield of corn is only 7 bushels per acre, approaching the record low yield of 5 bushels per acre in Page County in the historic drouth of 1894. Roughly it may be said that Iowa's corn crop was damaged $5,000,000 per day during this eight-day period. Though it is difficult to assign a damage value to particular days, it seems probable that the damage on three days August 4-6, at the climax, was approximately $10,000,000 per day. To save the crop, much of it was cut for fodder and silage. Live stock was put on winter feed in the damaged area as early as the latter days of July and many hogs and cattle were shipped to regions where feed was more plentiful. In the northern and eastern portions, the corn crop was bountiful, the largest average yield being 51 bushel per acre in Cedar County.

Profiting from the anxiety and tremendous effort in obtaining good seed corn last spring, farmers have this fall saved a large supply, in most instances enough for two years, and it is believed that the quality is excellent, though no extensive tests have yet been made and much will depend on the care used in storing this seed.

Sweet corn yielded well outside of the drouthy section but suffered unusual damage from the corn ear worm, *Heliothus obsoleta*, for which, as yet, entomologists have discovered no remedy within the bounds of economy.

A determined campaign to increase the acreage seeded to winter wheat this fall has brought large results in the sections of the State where the crop is usually grown, but not much extension to new territory. It is impossible at this time to state what the acreage is, but it is probably somewhat less than the million-acre goal set. The crop is entering the winter in unusually good condition, 95 per cent of the acreage having made good to rank growth and become well established. Four per cent has germinated but made little showing above ground, and only one per cent has apparently not germinated.

With all of its vicissitudes the crop season of 1918 finally resulted in the usual large cash balance sheet for the State. Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service, showing the average yields per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1918 This report does not include or take into consideration live stock, poultry or dairy products.

Corn.—The estimated acreage was 10,337,700, or 33,000 acres less than in 1917; average yield, 34.4 bushels per acre; total yield, 356,667,000 bushels; average price, $1.23 per bushel; total value $438,712,710. Only 4 per cent of the crop was reported to be soft or immature; and 91 per cent had been husked on December 1st. The crop this year is being referred to as "disappointing," yet the yield is only 2.1 bushels per acre below the average of the last 10 years and the total crop, 356,677,000 bushels, has been exceeded but four times in 29 years. The quality is excellent and the feeding value of the 1918 crop is much greater than that of the 1917 crop bushel for bushel.

Oats.—The estimated area harvested was 5,426,500 acres, or about 16,500 acres more than in 1917. Average yields, 40.1 bushels; total yield, 217,592,500 bushels; average price, 64 cents; total value, $140,043,200.

Spring Wheat.—Area harvested, 580,400 acres, or about 415,600 acres more than in 1917; average yield, 18.2 bushels per acre; total yield, 10,584,600 bushels; price per bushel, $1.99; total value, $21,063,354.

Winter Wheat.—Area harvested, 197,270 acres, average yield per acre, 19.9 bushels; total yield, 3,920,810; average price, $2.02 per bushel; total value, $7,920,036.

Barley.—Area harvested, 340,100 acres; average yield per acre, 31.3 bushels; total yield, 10,649,200 bushels; average price, 89 cents per bushel; total value, $9,477,788.

Rye.—Area harvested, 50,040 acres; average yield, 18.1 bushels; total yield, 905,850; price per bushel, $1.48; total value, $1,340,658.

Flax Seed.—Average yield, 10.1 bushels; total yield, 87,450 bushels; total value at $3.26 per bushel, $285,087.

Timothy Seed.—Area harvested, 156,750 acres; average yield, 4.3 bushels; total yield, 673,025; total value at $4.27 per bushel, $2,873,817.

Clover Seed.—Area harvested, 23,480 acres; average yield, 1.5 bushels; total value at $19.74 per bushel, $695,243.

Potatoes.—Area harvested, 97,210 acres; average yield, 76.1 bushels; total yield 7,394,750 bushels; average price, $1.32; total value, $9,761,070.

Hay (Tame).—Average yield, 1.3 tons per acre; total yield, 3,357,100 tons; average price, $19.57 per ton; total value, $65,697,448.

Hay (Wild).—Average yield, 1.2 tons; total yield, 594,580 tons; average price, $16.00; total value, $9,513,280.

Alfalfa.—Area harvested, 116,040 acres; average yield, 2.8 tons; total yield, 329,110 tons; average price, $23.93 per ton; total value, $7,875,602.

TABULATED CROP REPORT.

Crop.	Acres.	Average Yield.	Average Price.	Total Yield.	Total Value.
Corn	10,337,700	34.4 bu.	$ 1.23	356,677,000	$438,712,710
Oats	5,426,500	40.1 bu.	.64	217,592,500	140,043,200
Spring Wheat	580,400	18.2 bu.	1.99	10,584,600	21,063,354
Winter Wheat	197,270	19.9 bu.	2.02	3,920,810	7,920,036
Barley	340,100	31.3 bu.	.89	10,649,200	9,477,788
Rye	50,040	18.1 bu.	1.48	905,850	1,340,658
Flax Seed	8,687	10.1 bu.	3.26	87,450	285,087
Timothy Seed	156,750	4.3 bu.	4.27	673,025	2,873,817
Clover Seed	23,480	1.5 bu.	19.74	35,220	695,243
Potatoes	97,210	76.1 bu.	1.32	7,394,750	9,761,070
Hay (Tame)	2,502,620	1.3 tons	19.57	3,357,100	65,697,448
Hay (Wild)	491,590	1.2 tons	16.00	594,580	9,513,280
Alfalfa	116,040	2.8 tons	23.93	329,110	7,875,602
Pastures and Grazing (Estimated)					90,000,000
Ensilage (Estimated)					20,000,000
Sweet Corn(Estimated)		3.0 tons	15.00		6,000,000
Pop Corn (Estimated)	18,805	19.5 bu.	4.16	366,700	1,525,472
Buckwheat (Estimated)	16,000	15.3 bu.	1.70	244,800	416,160
Fruit Crop (Estimated)					6,000,000
Garden Truck (Estimated)					8,500,000
Sugar Beets for Manufacture (Estimated)	7,000	10.0 tons	9.00	70,000	630,000
Miscellaneous (Estimated)					11,500,000
Total					$859,830,915
Total value of soil products for 1917 was					$822,061,291

AFTERNOON SESSION.

2:00 p. m.

The President: Gentlemen, the meeting will please come to order. We have with us today Mr. Earl Ferris of Hampton, who is connected with the Horticultural Society, which is putting on a show at the Coliseum.

Mr. Earl Ferris, Franklin County: Gentlemen, we have put on a fruit show down at the Coliseum, which is one of the best exhibitions of the kind ever pulled off in the State of Iowa. We want to make this fruit exhibit an annual affair, and something that Iowa may be proud of. We who have charge of this exhibition feel we cannot make it an annual affair unless all the men like you in the State of Iowa are interested in it. I have been sent up here to invite you to come down, and as soon as this meeting is over we want you to visit our fruit show. My instructions are that if you don't come on invitation I must use either chloroform or a gun.

Mr. E. M. Reeves, Bremer County: I make a motion that at the conclusion of this meeting those present go in a body over to the Coliseum and visit the fruit show on the invitation extended by Mr. Ferris.

Mr. E. T. Austin, Marshall County: I second the motion.

The President: You have heard the motion and the second. All those in favor of the motion say Aye. Unanimously carried.

The President: We have with us today, gentlemen, a man whom I have personally known for the past twelve or fifteen years; a man of whom I can say, without fear of contradiction, that he has been one of the most untiring workers in state fair work in the United States. He has been president of the American Association of Fairs and Expositions for the last two years. He is now secretary of the state fair of the great State of Kansas, and I want to introduce to you, Mr. A. L. Sponsler, who will speak to you on the subject of "Fairs, Their Opportunities and Management."

FAIRS, THEIR OPPORTUNITIES AND MANAGEMENT

By Mr. A. L. Sponsler (Hutchinson, Kansas).

Mr. Chairman and Gentlemen of the Convention: In an unguarded moment a few days ago I answered an invitation, hastily, that I received from your secretary to address you here today. After thinking about it, it struck me that my reply really should have been similar to that of the colored man who was asked to change a twenty-dollar bill, I should have refused with "thanks for the compliment"; consequently I appear before you today with an apology and with due humility, because I do not assume to come here to teach you men of Iowa how to run a fair. Out in the states, generally, we look to Iowa as affording the sample fair of the United States. You have developed here one of the greatest plants in America, and you have stuck to the right theory of conducting a fair. It is a wonderful institution, and your county and district fairs are equally successful—I have just been reading the reports of them—so that I do not have the monumental nerve of attempting to teach you how to run a fair, but rather come here to learn.

Nineteen years ago this winter, having just fairly begun the breeding of Shorthorn cattle on my farm near Hutchinson, Kansas, I felt the need of a fair, and I began interesting some of the more influential men of my town and community, as well as thruout the Arkansas valley, in the possibilities of such an institution, with the hope of organizing a fair. That is how I happened to get into it. I was elected president of the fair—I little dreamed I would some day be a fair manager myself—and it devolved upon me two years later to either accept the management of the fair or let it go by the board, and I took the job and have been at it ever since. We began in a modest way. I said to my folks that a country that was good enough to live in was good enough to invest money in; and a town that was good enough to run a fair was good enough to own some ground in which to conduct the fair, so on that theory we bought 52 acres of ground in the north part of town (at that time the city being about 8,500 population)—we bought it for $5,000.00. Later, I believe it was nine years later, we sold that ground for $87,000.00 and moved our equipment to the ground just north, which is now the state fair grounds. The fair, of course, has been a success. The city has grown since that time from 8,500 to 26,000, and in the ten-year period following, that congressional district, comprising southwestern Kansas made 50% of the entire growth in population the state of Kansas made during that period. A number of the more important business men of southwestern Kansas have said that the influence of the fair had more to do with the growth of central and western Kansas in population than any other institution in the state. I only cite this as an incident, which you have all probably experienced, that a fair develops the country in which it is located.

The state fair has developed Iowa. Your county fairs have developed your localities. Our county is the premier agricultural county in the state. We are first in silos, first in cream separators and first in tractors. Reno county and the counties adjoining it in a single year raised as much as 32-million bushels of wheat, besides large herds of cattle, a great many hogs, large yields of alfalfa, etc. The fair is a natural developer and I don't know of any instance in the country where it is more significant than right in my own locality, as to what a fair will do for its community.

Since I got into the fair game I have made a study of it and the more I have studied it the more interesting it becomes. Centuries ago, as one reads history, there were fairs. There were fairs in Italy, fairs in Greece, fairs in Russia, and many other places. Those fairs were simply business concerns and it is from that that "The Fair," an institution in Chicago, and similar merchandising concerns elsewhere have taken the name of "The Fair." That is where they got the idea.

About 150 years ago in the valley of the Tees in northeast England they began the real thing, which was the bringing out of their steers for comparison. They began in a very crude way, as many other things have grown great from small beginnings, and when they compared steers with each other, they began comparing the sire and the dam. Thus grew up a type in cattle, an approved type, and from that grew the first Shorthorn registry, as I am informed. That type has proved its importance as time passed, of course. The Bates and Booth types, and many other breeds of the time, have been superseded by the thicker, shorter-legged growths. The natural tendency of all animals is to gravitate toward their natural methods of self-preservation and self-defense, while those brought under domestic influences take on very different characteristics, and the fair teaches us what those characteristics are. In the cattle exhibit of the fair the young man or boy has an opportunity to study these types. In my own case that is precisely what happened, and succeeding fairs that I attended gave me an idea of type. It wasn't long until we discovered that the lighter weight, longer legged, and long-horned, peaked-faced steers, we were raising, was entirely wrong in type, whereas they should be broad between the eyes, short between the eyes and muzzle, broad of back, and thick all the way thru, and when that discovery was made it was the right kind of idea and the correct principle for a young man to carry home with him. What is true of cattle is also true of every other class of live stock, until we have all learned that the cheapest pound of beef produced is the pound bred upon the animal; and we have also learned that the cheapest pound of wool produced is that bred upon the animal.

We are engaged in setting standards, and these methods are by comparison, and it doesn't make any difference whether you are in the art department, the textile department, the farm department, the livestock department, or any other department—it is all a matter of comparison. The world moves and acts in a comparative way. The great American horse was developed by the track. It was a necessary adjunct to the fair, not only as a means of entertainment, but by means of it the great American horse was developed. The trials at speed developed the best. Those that had the greatest speed and the most sturdy bodies were used in improving the breeds and by that means better horses were produced until we have got today the most remarkable horse in the world. One of the most pathetic things today is the passing of the great American horse.

The fairs afford great opportunities in every respect so far as the development of the people are concerned. I have often thought that a fair was worth all it costs of time and money spent as a social proposition alone. We have rather few opportunities of meeting together as a state organization, or even as county people, and it is worth all the time and effort socially, to say nothing of the tremendous advantages in other directions. Another thing is the entertainment features. The entertainment that we have at these fairs makes it really possible for us to produce great good among our people. Can you imagine any traveling show carrying what may be seen at a fair? Nowhere can you see what can be seen at one of these great fairs. The farmers living at distances where they have only small picture shows, or something of that kind, are worthy of the best. I congratulate you upon the grand entertainment you have given here. You could afford almost anything. No traveling concern could start to afford the great things you have here.

Two years ago when I was elected president of the American Association of Fairs and Expositions, I proposed that we interest the government in our fairs. They were kind enough to eventually pass a resolution—kind in one way but not in another—giving me carte blanche all the authority that the association could give me and asking me to go to Washington and see what could be done. I think where a community is back of its own fair and the people being for it and the states having the fair and the people being for it, it is an ideal situation, because virtually all these managers are simply stewards of the people's money, and if we have any profits it is not pocketed but is put back in the fund and eventually redounds to the benefit of the public. So that sort of organization is multiplied many times until now there are between 25 and 30 million people served annually at these fairs. That being the case, it struck me and others that the government should begin to get interested in these fairs. This is a wonderful government and any man that doesn't go to Washington and spend a couple of weeks or a month, if he has the time, is scarcely doing himself justice. There is at Washington an inconceivable amount of show material and still I ran across one man down there, who is a very able and efficient head of a bureau, who said to me "There are many of us who do not have what might be termed the show-sense." He says, "I wouldn't know whether in my bureau there is a single thing that would be worth showing in any of the state fairs. A man who has show-sense might come in here and find numerous things that would be exceedingly interesting to people." He says, "I don't know that." Other men have that sense and are very, very anxious to carry out the idea.

I found that the government had, in the Department of Agricultural, an office called the "Office of Exhibits," and from that office, under the supervision of Prof. F. Lamson Scribner, we carried on all our work, because it was the only place in Washington where any exhibition idea was studied out. They were very anxious, of course, to enter into any kind of a practical exhibition that their means would permit. The trouble with it, we found, was there was really no authority under the law for any of the other departments to make an exhibition, and all exhibition material which was secured was made available because the head of the department simply crossed his fingers and let it out. My experience down there led me to understand that there are many men in this country who have no adequate conception of the fair. A good many of them think a fair is a great big picnic where thousands of people have a good time. They don't really understand the great educational benefits of a fair, and education is the prime consideration of all properly conducted fairs. The Office of Exhibits, of course, understood thoroly the principles of the fair, but the question was "who was going to do it?" and "how was it going to be done?" They hadn't the money; they hadn't the equipment. The office of Mr. Hoover was visited and he had a man in there from Connecticut—a young man, a graduate of Yale, and a very fine gentleman. He said he had never attended a fair, but it seemed up to him to put out the exhibit for the government of the United States this year at the fairs. Well, of course, to one of experience, I realized that he had a great big job on his hands, but he had consulted with his superiors and they decided that he should go ahead. Of course, he ran up against a stone wall and wrote me that it was impossible for them to do it. Then the Office of Information was sought. The president of the United States was given 100 million dollars which he could use in any way that he saw fit and the Office of Information had the first call on the money, so we went to the Office of Information and a gentleman from Iowa by the name of Mr. Byoir seemed to be next to Mr. Creel in this matter and they decided they would go into it and they would put on this exhibition. They picked out a young man from the city of New York who was a very fine gentleman, a newspaper man of eminence, and an all-around competent young man except that he had had no fair experience. He said, "The congressman from my district sends me seeds, but I would have to go 15 miles to find a square yard of earth in which to plant the seeds that I get. I don't know anything about exhibitions; I live in the heart of New York City." Well, it looked like a hard job but they were going at it and they said that they would put it on. The next thing I heard was that they were not going to put it on; but in the meantime the Department of War had appointed a man from the Quartermaster's Department, a man who had had experience in every exposition that the United States had had part in since 1893—Chicago, Buffalo, Atlanta, San Francisco, St. Louis and various other places where the government of the United States had exhibited. We found that Capt. Hettinger was a real fair and exposition man and the determination by the various departmental heads then was made to put this work in the Office of Exhibits where it naturally belonged. We secured from Mr. McAdoo baggage cars to ship the exhibits in over six different circuits and the whole busness had to move and move very rapidly. Now, think, this was all done inside of 90 days. As slow as the government generally moves, I think that they did very remarkably. We run up against various troubles, too, early in 1918, and there was considerable talk of fairs being really nonessential. That had to be discussed and was discussed for several days in Washington until finally it was swept aside and Dr. Pearson, of this state, had considerable to do with assisting in that thru the Department of Agricultural, the Treasury Department, etc.

After the exhibits were determined upon and after the fairs were declared to be essential, as the governor indicated here today, to the life of the people both socially and commercially in time of war as well as in peace, they so determined and moved right on.

Then came the matter of taxation. We had to present to Mr. Roper, the Commissioner of Internal Revenue, all our arguments with respect to fairs. Mr. Roper had no idea regarding fairs, neither did any of his assistants. That department thinks of just one thing and that is getting the money, and they care little how they get it so long as it is done legally. They are sure strong for getting the money—that's their business—and, of course, we glory with them in it so long as they do it right without damaging any other interests. But the agricultural fairs of America were specifically exempted from taxation by the bill passed by congress and we thought the phraseology of the law was such that the congress meant to inflict no tax on the people conducting agricultural fairs at all. We finally got a ruling that the agricultural fairs would not be subject to taxation, that the grandstand or any of the inside gates would not be taxed, and that entertainments where the shows or carnivals were playing on a percentage basis would also be exempt. That continued to be the ruling of the Internal Revenue office until about the 2nd of November. when that ruling was changed and the law now with respect to taxation applies to those carnivals unless they pay the fair at least 25% of their gross receipts—otherwise the tax applies. If they pay you 25% or more of their gross receipts, then they are entirely exempted.

There were a great many interesting features connected with the work as a whole. The senators and congressmen seemed very much interested and my card on which I had printed, of course, "President, American Association of Fairs and Expositions," was virtually a pass for me—I could go anywhere that a civilian could go. In this work during the last 15 months I have had personal interviews with the President of the United States, practically all of the cabinet officers, and any one else that we desired to talk with about it. So that the prospect for the government entering into the fair business, into the show business, I think is brighter now than it was ever before, and they have thought of it more in the past year than ever before in the history of the government.

Now then, it is going to be impossible for the government to send exhibits to all the fairs of this country. There are something like fifteen or sixteen hundred fairs in this country and it is a virtual impossibility for the government to reach all of them, but the way it is going to benefit the fairs most is the fact that the government of the United States has approved of the fair idea. That is going to help every county fair, even tho the county fairs may not be visited by government exhibits, as will be expected at the great state fairs. Still, the very fact that the government has approved the idea is going to have a wonderfully beneficial influence upon the fairs of the United States generally. It is a kind of education that the government has never placed its stamp of approval upon till now and now is the time for congress to give the department some latitude and more money to make these exhibits. I look for the time to come when the Office of Exhibits, or the Bureau of Exhibits at Washington, D. C., will have its own cars, perhaps painted white with gilt letters on the side "United States Government Exhibit." I think we will all eventually see that.

It is astonishing the exhibits that they have there when one looks for them. After viewing Washington a month or two or three, and I have been there a number of times, one begins to realize what splendid show material may be found there. I always go in my spare time to some of the great museums, the art galleries, or some of the great departments there. Recently an experienced Washingtonian remarked to me that the National Museum alone could furnish car loads of exhibits for the fairs of the United States, much of which is not even now on exhibition in Washington—simply stored away—vast quantities of it.

Now, to the people of the United States, this is a government of the people, by the people and for the people, and they are all supposed to know what the government is spending money for and what it is doing. When one picks up a paper and reads of these departmental appropriations and sees the tremendous sums of money appropriated he wonders what it is all for and I think it would be a great thing for the protection of the government itself for the government to get out and show the people more of what it is spending its money for. It is a patriotic thing to do and it is a wonderfully educational thing. It puts the government in accord with the people, thereby bringing the government a little closer to the people. There are millions and millions of our people who cannot go to Washington and, considering the small cost of shipping these exhibits about, I think it is one of the greatest things the government can do, considering the time it requires and the money also.

The fairs of the country are on a firmer foundation now than they were and eventually the government will have its own exhibition building on all these fair grounds. That is still a thing of the future, but it is going to come true. It has exemplified this year how it could be done and how cheaply it could be done, and I think it is one of the great things that is coming.

Now, as I said before, I am not here and do not assume to attempt to teach you gentlemen of Iowa how to run a fair. The management of a fair is just simply like the management of any other business. All thinge relative to it have to be considered and it is purely a business proposition. Since men do things, it is very essential to secure strong men in the various organizations. I have noted the remarkable cooperation here in Iowa between your agricultural college and your fair. This great bureau of farm agents and the fair and other like organizations and agencies. In other words, you are working together here for the benefit of Iowa, the like of which I have seen in no other state and I congratulate you upon your magnificent success. I bespeak for you a still larger vision, as your governor indicated to you today, in this new age that we are just entering upon and I shall still look to Iowa to keep its place at the top. (Applause)

The President: The next order of business will be the report of the Committee on Credentials.

REPORT OF COMMITTEE ON CREDENTIALS

We, your committee on credentials report the following list of delegates entitled to vote at the State Agricultural Convention, December 11, 1918.

COUNTY AND DISTRICT FAIRS.

Adams County	Geo. E. Bliss, Corning
Black Hawk	H. S. Stanberry, Cedar Falls
Black Hawk	J. P. Eves, Waterloo
Bremer	J. Q. Lauer, Waverly
Calhoun	Andrew Stewart, Rockwell City
Clinton	G. H. Christensen, DeWitt
Davis	Frank C. Young, Bloomfield
Hamilton	W. H. Stacy, Webster City
Harrison	L. R. Pike, Missouri Valley
Jefferson	L. H. Alexander, Fairfield
Keokuk	Ray H. Bedford, What Cheer
Kossuth	F. A. Corey, Algona
Marion	Seth Way, Knoxville
Marshall	Ed. T. Austin, Marshalltown

Mills	G. H. White, Malvern
Monona	N. W. McBeath, Whiting
Muscatine	W. H. Shipman, West Liberty
Pocahontas	O. A. Mullen, Fonda
Poweshiek	I. S. Bailey, Jr., Grinnell
Sac	W. F. Weary, Sac City
Wayne	John Krouse, Corydon
Woodbury	Carl Leytze, Sioux City

FARMERS' INSTITUTES.

Calhoun	B. E. Morton, Rockwell City

COUNTIES IN WHICH NO FAIRS WERE HELD.

Franklin County	T. W. Purcell, Hampton
Madison County	T. J. Hudson, Winterset
Polk	J. A. Backman, Des Moines
Ringgold	J. F. Wall, Mt. Ayr

ASSOCIATIONS ENTITLED TO REPRESENTATION.

State Horticultural Society	Earl Ferris, Hampton
Iowa Swine Breeders' Association	F. W. Stephenson, Des Moines

STATE BOARD OF AGRICULTURE.

Ex-Officio Members.

Governor	W. L. Harding, Des Moines
State Dairy and Food Commissioner	W. B. Barney, Des Moines

Officers.

President	C. E. Cameron, Alta
Vice President	J. P. Mullen, Fonda
Secretary	A. R. Corey, Des Moines
Treasurer	W. W. Morrow, Afton

District Members

First District	H. O. Weaver, Wapello
Third District	E. M. Reeves, Waverly
Fourth District	E. J. Curtin, Decorah
Sixth District	T. C. Legoe, What Cheer
Seventh District	C. F. Curtis, Ames
Eighth District	F. E. Sheldon, Mt. Ayr
Tenth District	Sears McHenry, Denison
Eleventh District	H. L. Pike, Whiting

H. L. Pike,
G. N. White,
Frank C. Young.

The President: Gentlemen, what will you do with the report of the Committee on Credentials?

Mr. J. Q. Lauer, Bremer County: I move the report of the Credentials Committee be accepted as read.

Mr. Earl Ferris, Franklin County: I second the motion.

The President: It has been moved and seconded that the report of the Committee on Credentials be approved as read. All those in favor of the motion say Aye—opposed the same sign. Motion carried.

Mr. J. Q. Lauer, Bremer County: I want at this time to refer to three letters which I received from some of our absent members. You are all acquainted with Mr. Clark of Marshalltown; Mr. Kaskey of Manson and Mr. Beckner of Clarinda. They are absent today on account of illness. Mr. Kaskey of Manson this year, in August I think it was, suffered a paralytic stroke on his left side, and at the meeting of the Entertainment Committee which I attended at Fort Dodge some five or six weeks ago, he was there and stated he expected to be here today. However, the representative from there says he did not feel able to make the trip. J. C. Beckner of Clarinda and Mr. W. M. Clark of Marshalltown are both under the doctor's care and the three have asked me to kindly remember them to this organization today.

The President: The next will be the report of the Committee on Resolutions. Are you ready to report?

Mr. L. R. Pike, Harrison County: The report of the Resolutions Committee reads as follows:

RESOLUTIONS.

WHEREAS, Mr. O. A. Olson, our vice president, departed this life on the 26th day of May, 1918, and whereas Mr. Olson for many years past has been prominently identified with the Iowa State Board of Agriculture, both as director and as vice president, and whereas the long continued and faithful service of Mr. Olson as said member is known and appreciated by the board and the delegates at the State Agricultural Convention, therefore be it

RESOLVED by this convention that in the death of Mr. Olson we feel the board has lost one of its most influential members; the State of Iowa has been deprived of the services of a very useful and able citizen and the board members and delegates at this convention feel that they have sustained a very great personal loss in his death.

BE IT FURTHER RESOLVED that this board and the delegates at this convention tender to his bereaved wife and son, in this time of their sorrow, our most sincere sympathy and condolence, and be it further

RESOLVED that these resolutions be spread upon the permanent records of this convention and that a copy of these resolutions be forwarded to his family.

L. R. Pike,
H. O. Weaver,
Ed T. Austin.
Committee

Mr. L. R. Pike, Harrison County: Mr. President, I make a motion that we have a rising vote upon this part of the resolution.

Mr. J. P. Mullen, Pocahontas County: I second the motion.

Mr. President: Gentlemen, you have heard the report of the Committee on Resolutions with reference to Mr. O. A. Olsen. All those in favor, please rise to your feet. It is unanimously carried.

Mr. L. R. Pike: Mr. President, your Committee on Resolutions beg to submit the following also:

BE IT RESOLVED that it is the sense of the Convention that the Legislative Committee be instructed to present an amendment to the present law providing all county and district fairs of the state who shall hereafter apply for state aid according to law, shall be represented by a duly authorized representative at the annual meeting of the State Board of Agriculture, and that funds allowed upon application for state aid shall not be paid until December 15th of each year.

Respectfully submitted,
L. R. Pike,
H. O. Weaver,
Ed T. Austin.

Mr. L. R. Pike: I will move the adoption of the resolution.

Mr. W. H. Shipman, Muscatine County: I second the motion.

Mr. J. Q. Lauer, Bremer County: I see by Mr. Corey's report there are just twenty fairs represented here this afternoon. I have told a great many of the fair men of the attitude taken by some fair secretaries and I hope legislation may be enacted to compel attendance at this meeting of all fairs receiving state aid, and that state aid not be paid until after this meeting. That would postpone payments somewhat, but at the longest it would not be more than three months.

Mr. E. J. Curtin, Winneshiek County: This meeting comes the second week in December, and that would postpone the mailing of these checks until after the holidays, with the result that we would not get our money until about the middle of January. Why not make that provide for the sending out of the state aid immediately after the meeting? Say December 15th.

Mr. L. R. Pike: That is satisfactory to me.

The President: Are there any further remarks? If not, all those in favor of the motion, signify by saying Aye—opposed the same sign. It is unanimously carried.

Mr. L. R. Pike: Our attention was called to another amendment relative to the appropriation that supervisors of the county make to county and district fairs. Now, the law requires that the county or district fairs must own their own real estate before the board can levy a tax upon all the property in the county and pay them not exceeding $1,000 each year for the erection of buildings, etc. The committee was asked to present in these resolutions a resolution favoring the amendment of the law to take out the requirement which provided that the fair association should own the real estate; but the committee did not agree upon the matter, and with that situation we decided to put it up to the convention for discussion.

Mr. W. F. Weary, Sac County: Do I understand from that that they are limited to $1,000 a year, or $1,000 altogether?

Mr. L. R. Pike, Harrison County: One thousand dollars altogether. It appears that some of the fairs do not own their own grounds, and therefore they are cut out by the board of supervisors from getting this appropriation. According to the provisions of the law, they must own their grounds to get that amount.

Mr. H. S. Stanberry, Black Hawk County: There is a little misunderstanding regarding that proposition. Any county board of supervisors can vote this $1,000 aid, whether you own the grounds or not, but the suggestion as presented yesterday was this: There are many fairs that would like to get $1,000 aid every year. The law as it reads now provides that you cannot get this aid each year unless the county owns their own grounds. Is that plain? The county must own their own grounds in order to get $1,000 every year. What we want to do is to strike out that portion of the law in which it says the county must own their own grounds in order to give the county fairs $1,000 annually—not only for one year.

The President: Is there any further action you want to take on this matter?

Mr. W. W. Morrow, Union County: Perhaps that should be left with the Legislative Committee.

The President: The next order of business will be the election of president, vice president and directors from the even numbered districts. Vice President John P. Mullen was called to the chair.

Mr. Mullen: Gentlemen the first office to be filled is that of president. Nominations for president for the ensuing year will now be in order.

Mr. W. W. Morrow: I wish to place in nomination for the office of president a gentleman who is known wherever fairs are held. I place in nomination, Mr. C. E. Cameron to succeed himself. Motion seconded by Mr. Geo. H. White.

Mr. Earl Ferris, Franklin County; moved that nominations close; that the rules be suspended and the secretary instructed to cast the vote of all delegates present for Mr. Cameron for president. Motion seconded by Mr. W. F. Weary. Motion unanimously carried and the secretary so cast the forty-three votes of the convention for Mr. C. E. Cameron, Buena Vista County, to succeed himself as president and Vice President Mullen declared Mr. Cameron duly elected president for the ensuing year.

Mr. C. E. Cameron: In all the time I have been connected with fair work, I don't know of a time when I have enjoyed a meeting as I have this one today and the one we had yesterday. While both meetings have not been so largely attended as some in the past, they have been the most interesting I have ever attended. We have been surrounded by the most interesting fair men in this country, supporters of the fairs of Iowa, and it has been an inspiration to me. I am glad, gentlemen, to again associate myself with such a bunch of boosters as you are—you who are working day and night to boost the agricultural interests of Iowa. I thank you!

The President: The next office to be filled is that of vice president. Nominations are now in order.

Mr. C. F. Curtiss, Story County: There is always a high compliment in having worthy work well done, and this fair has that kind of a man in the position of vice president. About a year ago a man who was visiting our fair, representing a foreign government came to me and said he wanted to buy several hundred tractors—that he wanted to arrange to buy them on the fair ground for his government, and he wanted to know where he could get the best information about those tractors. He said he didn't want salesmen or some one concerned; he wanted some disinterested tractor man. I knew where such a man could be found, and I took him to the Superintendent of the Machinery Department and told him he would be well taken care of. I saw this man the next day and asked him if he got the information he wanted. He said "That man is onto his job, and I got just what I wanted and closed the deal." This genial gentleman has another distinction, by his own admission—he is the only politician on the Board. He testified before the Retrenchment and Reform Committee of the legislature that all the rest of the members were farmers and democrats. He is a man who has made good and always makes good in any position he occupies. I consider it a pleasure to nominate J. P. Mullen of Fonda.

The nomination of Mr. Mullen for vice president was seconded by Mr. Curtin. Mr. Curtiss moved if there were no further nominations that the president declare nominations closed and the secretary be instructed to cast the vote of the convention for Mr. J. P. Mullen to succeed himself for vice president. Motion seconded by Mr. Curtin and unanimously adopted. The secretary so cast the forty-three votes of the convention for Mr. Mullen and the president declared Mr. Mullen duly elected vice president to succeed himself for the ensuing year.

Mr. J. P. Mullen:

Mr. Chairman and Gentlemen: I sincerely appreciate this confidence and for the generous support and recognition you have given me so many years. It will be my best effort to co-operate with the other members of the State Board of Agriculture to make our fair even more successful in the future than it has been in the past. I sincerely thank you again for this honor, and I hope it will not have been extended in vain.

The President: The next offices to be filled are those of directors from the even numbered districts. Nominations are open for members of the board from the second district.

Mr. T. W. Purcell, Franklin County: I wish to place in nomination Mr. E. T. Davis, Iowa City, to succeed himself. Nomination seconded by Mr. Earl Ferris. Mr. T. W. Purcell moved if there were no further nominations that nominations close, the rules be suspended and the secretary instructed to cast the vote of the convention for Mr. E. T. Davis. Motion seconded by Mr. Ferris and unanimously adopted. The secretary so cast th forty-three votes of the convention for Mr. Davis and the president declared Mr. Davis duly elected member of the State Board of Agriculture from the second district for the ensuing two years.

The President: The next office to be filled is that of director from the fourth district.

Mr. H. S. Stanberry, Black Hawk County: I would like to place in nomination Mr. E. J. Curtin, Decorah, Iowa, to succeed himself. Motion seconded by Mr. Geo. H. White. Mr. Stanberry moved if there were no further nominations that the nominations close, the rules be suspended and the secretary instructed to cast the votes of the delegates present for Mr. Curtin. Motion seconded by Mr. White and unanimously adopted. The secretary cast the forty-three votes of the convention for Mr. Curtin and the president declared Mr. Curtin duly elected member of the State Board of Agriculture to represent the fourth district.

The President: The next office to be filled is that of director from the sixth district.

Mr. V. G. Warner, Davis County: I wish to place in nomination Mr. T. C. Legoe, What Cheer, to succeed himself as director from the sixth district. Nomination seconded by Mr. I. S. Bailey. There being no further nominations Mr. Warner moved the rules be suspended and the secretary instructed to cast the votes of the convention for Mr. T. C. Legoe to succeed himself as director from the sixth district. Motion seconded by Mr. Bailey and unanimously adopted. The secretary so cast the forty-three votes of the delegates for Mr. Legoe and the president declared Mr. Legoe duly elected member from the sixth district to succeed himself for the ensuing two years.

The President: The next office to be filled is that of director from the eighth district.

Mr. W. W. Morrow, Union County: I wish to place in nomination to succeed himself, Hon. F. E. Sheldon, Mt. Ayr. Motion seconded by Mr. H. L. Pike, Whiting. Mr. Morrow moved if there were no further nominations that nominations close, the rules be suspended and the secretary instructed to cast the entire vote of the delegates present for Mr. Sheldon for director from the eighth district. Motion seconded by Mr. Pike and unanimously adopted. The secretary so cast the forty-three votes of the convention for Mr. F. E. Sheldon and the president declared Mr. Sheldon duly elected member of the State Board of Agriculture from the eighth district.

The President: The next office to be filled is that of director from the tenth district.

Mr. Mullin: I wish to place in nomination Mr. Sears McHenry of Denison for the office of director of the State Board of Agriculture from the tenth district. Motion seconded by Mr. L. R. Pike of Harrison County. There being no further nominations Mr. Mullen moved the rules be suspended and the secretary instructed to cast the entire vote of the delegates present for Mr. McHenry to succeed himself as director from the tenth district. Seconded by Mr. Pike of Harrison County and unanimously adopted. The secretary so cast the forty-three votes of the convention for Mr. McHenry and the president declared Mr. McHenry duly elected member of the State Board of Agriculture to represent the tenth district.

The President: I believe this finishes the business meeting. Are there any questions or remarks to be made?

J. Q. Lauer, Bremer County: I do not believe we have fully decided some vital questions that will require legislative action and which should be brought to the attention of the Thirty-Eighth General Assembly this winter. I do not believe it is clear in the minds of the delegates who were at the county fair managers' meeting yesterday, or the delegates in attendance at this meeting, as to just what steps are going to be taken to secure an increase in state aid for the county fairs. There is also another matter that we should consider and that is the matter of having the statute providing $1,000 aid for county fairs for improvements amended so that it may be paid all fairs whether they own their own grounds or not.

I think it should be clearly understood as to whether these matters are to be taken up by the Legislative Committee of the county fair manager's association or the Legislative Committee of the State Board of Agriculture.

J. P. Mullen, Pocahontas County: I had the pleasure of being in attendance at the county and district fair managers' meeting yesterday and was very much interested in the discussion of these two propositions. I do not know that I fully understand just what action was taken at the meeting yesterday but I am under the impression that there was a Legislative Committee appointed by Mr. Stanberry to bring these matters to the attention of the legislature and to co-operate with the Legislative Committee of the State Board of Agriculture to bring about these changes during the coming session. Is that correct?

H. S. Stanberry, Black Hawk County: The Resolutions Committee was appointed by the chair and it was suggested to them that they adopt a resolution covering these matters and also indicate that the Legislative Committee of the County and District Fair Managers' Association should co-operate with the Legislative Committee of the State Board of Agriculture in bringing these matters to the attention of the legislature.

L. R. Pike, Harrison County: The Resolutions Committee of the County and District Fair Managers' Association presented a resolution with regard to the attendance at the State Agricultural Convention but did not take into consideration state aid for county and district fairs. I believe Mr. Cameron suggested at the meeting yesterday that he did not believe it was the proper procedure for the Legislative Committee of the State Board of Agriculture to father a bill to increase state aid for county and district fairs.

C. E. Cameron, Buena Vista County: I believe the bill for state aid to county and district fairs should come from the Legislative Committee of the County and District Fair Managers' Association but I am sure the Legislative Committee of the State Board of Agriculture will co-operate with them in securing the passage of the bill by the legislature.

E. T. Austin, Marshall County: There is one other matter that I do not think we finished and that is with reference to the matter covered by the paper read by Mr. Curtin this morning. I believe it would be a good idea for the different fair associations to send their proxies to some one who will attend the meeting of the American Trotting Association. As I understand it we can give our proxy to Mr. Cameron or Mr. Curtin or anyone who will be at the meeting. I think we should do this so our associations will be represented.

The President: Mr. Austin is correct. Some arrangement should be made to have your fair represented, either in person or by proxy in the hands of some one who will be present at the meeting and who will properly represent you. Another matter that is coming before the American Trotting Association, and you will receive notice of it when you receive notice of the meeting long in the spring, is the proposition of amalgamating the two parent associations—The American Trotting Association and The National Trotting Association. At the time the secretary of The American Trotting Association sends out the blank proxies and notice of the meeting he is going to ask each association to vote upon the proposition of consolidating. Through the information gained as a member of the committee of The American Trotting Association which met a like committee from the National Association for the purpose of discussing consolidations, I gained considerable first hand information and I want to say The American Trotting Association is willing to consolidate with the other organizations providing they can do so without surrendering all their rights and voice in the management of the new organization. So far there has not been much progress made along this line. The National Association simply want The American Association to surrender their charter and want the business to be taken over by the National Trotting Association. Under such conditions I think you should be very careful about your vote on that proposition. If you are going to send your proxy to Mr. Curtin. I believe the vote on this question should be left blank. Mr. Curtin will be thoroughly posted on the matter and should be left with authority to vote as he sees fit.

E. J. Curtin, Winneshiek County: I will tell you how I stand on the matter, unless I change my mind a great many more times than I have up to date. I personally favor the amalgamation of the two associations very much but I know the conditions as they exist. If consolidation could be brought about that would be on the level and on the square and take cognizance of the small and the large fairs, and give everyone a decent and fair representation, and work on the square all the way without regard to what salary is going to be paid the secretary, I am for it; otherwise I will vote against it.

The President: Is there anything further? If there is nothing further a motion to adjourn will be in order.

Motion made, seconded and unanimously adopted that the meeting stand adjourned.

PART III

Proceedings of the Eleventh Annual Meeting of the Iowa Association of County and District Fair Managers

HELD IN DES MOINES, DECEMBER 10, 1918.

The Secretary (J. Q. Lauer): We will come to order, gentlemen. We are a little bit unfortunate this morning by being deprived of the presence of both our president and our vice president. Mr. Beckner, our president is under the doctor's care, and Mr. Barber, our vice president, will not be here. Mr. Beckner wired me day before yesterday that he couldn't be here, so we find it necessary to appoint a temporary chairman for our meeting today so it is up to you men to make nominations for temporary chairman.

J. P. Mullen (Fonda). I will nominate Mr. Stanberry.

The Secretary: Is there any other nomination? Is there a second to that nomination?

Carl Leytze (Woodbury): Second the nomination.

The Secretary: All those in favor of the nomination of Mr. Stanberry as temporary chairman, signify by raising the righ hand. * * * Motion is carried. Mr. Stanberry.

The Chairman (H. S. Stanberry, Blackhawk): Gentlemen, the first thing we have on the program this morning is the reading of the minutes of the 1917 meeting.

The Secretary: I might say for the benefit of the members here that my room is Room E, on the parlor floor, and if any of you wish to use the room your are welcome. You will find the room just across the corridor.

The Chairman: I see the first thing is the appointment of our Credentials Committee and Resolutions Committee. I presume I can do that before we proceed with the minutes. What is your pleasure, gentlemen? First is the Credentials Committee. Do I hear a motion?

E. T. Austin (Marshall): I move that the chair appoint the Credentials Committee.

H. C. Leach (Davis): Second.

The Chairman: It has been moved by Mr. Austin of Marshalltown and seconded by Mr. Leach of Bloomfield, Davis county, that the chair appoint the Credentials Committee. All those in favor of the motion signify by raising the right hand. * * * Motion is carried. I will appoint on such committee, H. C. Leach of Davis county, E. T. Austin of Marshall county, J. P. Mullen of Pocahontas county.

These committees are to report following the reading of the minutes of the 1917 meeting and the treasurer's report; therefore I would suggest that you retire immediately to prepare your paper on credentials.

The next is the Resolutions Committee. How will we dispose of that?

G. E. Bliss (Adams): The same way as the other committee,—I move that the chair appoint them.

L. R. Pike (Harrison): Second.

The Chairman: It has been moved and seconded that the chair appoint the committee. All those in favor of such motion will please signify by raising the right hand. * * * Opposed the same sign. * * * The motion is carried.

On that committee I will appoint the gentleman who made the motion, Mr. Bliss of Adams county, Mr. Pike of Harrison, and Mr. Rollins of Oskaloosa, Mahaska county, with the same suggestion that they retire immediately to prepare resolutions and report after the reading of the minutes of the last meeting and the treasurer's report.

The Chairman: We will now hear the reading of the secretary's report.

The Secretary: The Credentials Committee wishes to make an announcement. On account of quite a number of the members not being here yet, and the possibility that they would come before this afternoon's meeting, they thought that it would be best not to make out a report until this afternoon, when they will be here and paid up ready for the vote.

The Chairman: That's a good suggestion. If there are no objections, the proposition will be accepted. Now, Mr. Lauer, we are ready for the reading of the minutes of the 1917 meeting.

The Secretary: I know you aren't anxious to hear me read this entire transcript for it is rather dry reading, and I don't have the various things well in mind, for you know that between the annual meetings one naturally lays aside the things pertaining to this meeting, so I have prepared a synopsis of the meeting last year and will read that to you.

MINUTES OF 1917 MEETING, TUESDAY, DECEMBER 11, 10:30 O'CLCK P. M.

The meeting of secretaries of the various county fairs was called for the dates of Tuesday, December 11, and Thursday, December 13. The opinion of those present at the 1916 meeting being that one day was not sufficient to carry out the various business meetings and programs, but after trying it out in 1917, it was thought best to go back to one day and this was unanimously adopted after being reported by a committee.

The forenoon of December 11 was taken up in straightening up dues, distributing recognition buttons and appointing both a Resolutions and Credentials Committee. Also a committee on dues was appointed.

Resolutions Committee: John Mullen of Fonda, Carl Hoffman of Atlantic, H. S. Stanberry of Cedar Falls.

Credentials Committee: F. A. Gatch of Greenfield, E. H. Graves of Ames, E. W. Williams of Manchester.

Also a general round table discussion was indulged in.

Adjourned for dinner 2 p. m., Tuesday.

In the afternoon various papers were read, the first of which was one by Luther Aasgaard of Forest City, on the topic, "Are Fairs Drifting to Amusements?" and without a doubt this topic met with immediate approval as this fact seemed to prevail that a fair must provide liberally of the amusement people to be a success and this was brought out clearly when Mr. Aasgaard used the term "don't give them what you think they ought to have, give them what they want." This topic was further discussed by Messrs. Mullen of Fonda, Hetwood of Brooklyn, Bennett of Janesville, Wade of Marion and Stanberry of Cedar Falls.

Various methods to build up a county fair by F. A. Gatch was the next paper and the many features he presented qualified him as a veteran. His method of stamping a person on the wrist in place of using the pass out check was a good and new idea, also his merchant's distribution plan of selling tickets and having a drawing on the grounds. Sheep as weed destroyers was also a feature of this Greenfield man and his profit of $500 seemed to appeal to all. Mr. Reeves of Waverly and Jones of Linn County also made a few remarks.

Mr. Neivich, an architect of Des Moines, was given a few minutes at this time.

Mr. Schofield, in the absence of Mr. Haynes of Eldora, made a few remarks pertaining to the disadvantage of allowing shows or carnivals to set up in town just prior to fair dates. This topic was discussed liberally.

The topic, "Publicity Costs and Results" was taken up as a round table talk and discussed by Messrs Barber, Stanberry, Gatch and Williams. Your secretary at this time brought up the matter of recognition buttons which he had secured and asked if it was the opinion of the organization that they were good enough, and if we should use them again for our 1918 meeting, and, as all seemed satisfied, a motion was made and carried that we use same for 1918.

The matter of annual dues was also discussed and a motion made and carried that the chair appoint a committee to report on dues. The committee was Barber, Clark and Curtiss. The matter of getting legislation whereby no fair could get state aid unless represented at the agricultural meeting was discussed and met with general favor, and it was asked that it be made a special topic at our 1918 meeting at which time committees could be appointed.

Mrs. Flo E. Connill, of the Teachers College of Cedar Falls, spoke in the interests of spelling contests at county fairs, and several expressed a desire of undertaking this feature. Several topics were discussed at this time after which the meeting was adjourned for lunch.

Meeting called to order by Chair at 7:30 p. m., Tuesday.

Address of Welcome by H. W. Byers representing Mayor MacVicar.

A paper by Mr. L. H. Pickard, of Harlan, "Benefits of Annual Meetings," was read by the secretary on account of the writer's absence. The points included in this paper showed that at least one person derived a benefit. All regretted that Mr. Pickard could not be present.

"How to Prevent Fairs From Being the Same Old Thing," by H. H. Rosebrook, once of Oskaloosa, now of Des Moines, was handled finely and his paper showed that Oskaloosa was sure to win out with these ideas in practice.

One of our old-new members, E. W. Williams of Manchester, discussed the matter of building up a down-and-out fair in " an old new corner." When Williams finished he had convinced all that he was a veteran both as a fair man and a man to place on a program.

Mr. I. Whitted read a paper on "How to Draw Crowds to a Fair." This paper was one which Len Small of the Kankakee County Fair read at the meeting of State Fairs and Expositions at Chicago in 1915. This paper was well received and brought out many facts worth taking into consideration.

One of the most interesting topics and talks of the meeting was by Mr. J. H. Parker, an extensive exhibitor of Clemons, Iowa, his topic being "An Exhibitor's Opinion of a County Fair."

Mr. E. S. Estell spoke on publicity and how he handled it at the Dairy Congress at Waterloo, and publicity after this seemed a minor task and all could see the reason for the continued success of the Dairy Cattle Congress.

THURSDAY, 10 A. M.

Meeting called to order by president. Minutes of 1916 business meeting read by secretary and on motion approved as also the secretary's annual report. These reports showed that during the year there were six new fairs joined the association. The receipts during the year were $596.06 and the disbursements, $568.00. This, of course, included the Taylor Bill assessments and disbursements.

Report of Credential Committee showed the following: There were 94 fairs in Iowa during 1917, 74 belonged to the association, 54 had paid their 1917 dues. This report was adopted.

The election of officers was held at this time with the following results: President, J. C. Beckner, Clarinda, Iowa; Vice-President, C. H. Barber, Mason City, Iowa; Treasurer, F. A. Gatch, Greenfield, Iowa; Secretary, J. Q. Lauer, Waverly, Iowa.

District Managers: Frank Montgomery, Mt. Pleasant; W. B. Griffin, Albia; F. C. Reese, Corning; R. J. Mott, Sutherland; C. G. Kaskey, Manson; S. D. Quarton, Algona; H. S. Stanberry, Cedar Falls.

REPORT OF RESOLUTION COMMITTEE.

RESOLVED, That the Iowa Association of County and District Fair Managers. in convention assembled, tender our hearty thanks to the officers of this Association for their untiring efforts in procuring legislation which has been so beneficial to our members, and other efficient service rendered by them.

Realizing further the importance of cooperation and organization, we further

RESOLVE AND RECOMMEND, That the Legislative Committee of this organization cooperate with the Legislative Committee of the State Board of Agriculture in procuring an amendment to the present law pertaining to state aid to fair associations, making it a requirement that in order to procure such aid, each fair association must have representation at the annual Agricultural convention.

BE IT FURTHER RESOLVED, That in this great conflict of war with other nations, we pledge our allegiance to our government and offer all our resources to the winning of this war against autocracy, and the ultimate victory for a united democracy of all nations.

New business: Various fairs were called upon to express opinions regarding their success with the various bills that have been brought about by this association.

Report of Dues Committee: This committee advocates the straight 1 per cent of amount received as state aid and with the banquet tickets as a separate consideration. This report was adopted.

Adjourned to 12:30 p. m. Lunch at Savery Hotel.

Address by Governor W. L. Harding.

Address by J. F. Deems and Dr. J. I. Gibson had to be dispensed with on account of their inability to be present. The smoker and short talk by visiting friends were a feature and the meeting aqjourned with all apparently satisfied with results of same.

In October this year you all received a circular letter calling attention to the fact that arrangements were under way for our 1918 annual meeting and also notice of annual dues. I tried to impress upon you all the necessity of being present at this meeting, suggesting as strongly as I could (without creating an opinion that the meeting was exclusively for amusement) that the social features would excel all past efforts, feeling that a dry, set and arranged program was not a sufficient inducement for a large attendance.

I called a meeting of the entertainment committee at Ft. Dodge which was attended by Mr. Kaskey of Manson, and Stanberry of Ft. Dodge, from which place I alone went to Des Moines where I tried to carry out the plans of the Ft. Dodge meeting and, with the exception of minor details, today's program is the result. I believe this annual meeting should be made so interesting that it will be looked forward to by every fair manager. I see no way you can interest them more than by round table talks and a set program such as we have arranged this year with just enough amusement and entertainment for diversion.

There has been a demand for the issuing in pamphlet form the minutes of our annual meetings. Lack of money has made this impossible in the past. This year I have a plan under way which can easily be carried to a successful conclusion, but must have co-operation to make it of any value. Replies to questions I have asked in a recent circular letter are of importance. Do not neglect this reply and offer any suggestions you may have in regard to its publication.

The year 1918 has been a peculiar one for the fair business. Lack of interest predominated. While it may have appeared on the surface, underneath it all there was a something that retarded activity. This has been eliminated and our 1919 fairs should be the best in the history of fairs. Let's work together, try and get better legislation to promote agriculture through the fairs, larger increase in state aid or appropriations to fairs and accurate accountings. Help the officers of this organization in every way possible. It's to your interest. Tell those in your vicinity of the advantages of a get-together meeting. Be a missionary. A little effort on the part of each may have an untold effect.

In conclusion I wish to thank you for the courtesy extended to me in selecting me for your secretary for the past few years. I have tried to carry out my part of the work as best I could. I feel as though I had done my part. I am confident the fairs have been benefitted by legislative acts and other efforts of the organization. Your program this year is better, I believe, because of better assistance, both financial and moral. I will do all I can in the future to create and promote interest in getting out the pamphlet mentioned before, but I am asking that before you get to the part where you select your officers, you give my resignation (which I am offering at this time) some thought, objective to a new man for secretary.

The Chairman: Gentlemen, you have heard the reading of the minutes. Are there any corrections or objections to the same? If not, they will stand approved.

The next will be the reading of the treasurer's report.

F. A. Gatch (Adair):

TREASURER'S REPORT, 1917.

Cash on hand last report		$28.06
Receipt, 1917 dues:		
Adair	$6.57	
Adams	4.00	
Benton	5.30	
Black hawk, Waterloo	8.00	
Blackhawk, Cedar Falls	8.00	
Bremer	8.00	
Buchanan, Independence	6.00	
Buchanan, Aurora	2.76	
Buena Vista	5.36	
Butler, Allison	4.42	
Calhoun, Munson	7.39	
Carroll	2.03	
Cass, Atlantic	7.65	
Cedar	6.90	
Clayton, Elkader	6.26	
Cerro Gordo	8.00	
Clinton	8.00	
Davis	6.74	
Fayette	6.40	
Guthrie	6.22	
Hancock	4.12	
Hardin	6.59	
Henry, Mt. Pleasant	8.00	
Henry, Winfield	4.55	
Jasper	6.77	

Keokuk	6.04		
Kossuth	7.70		
Linn, Marion	7.32		
Louisa, Columbus Junction	6.99		
Lucas, Derby	5.31		
Lyons	7.78		
Mahaska, Oskaloosa	8.00		
Marion, Pella	3.89		
Marshall, Marshalltown	8.00		
Mills	6.27		
Monroe	7.99		
Muscatine, West Liberty	8.00		
Page, Shenandoah	6.60		
Page, Clarinda	7.20		
Pocahontas	5.46		
Poweshiek, Malcolm	4.63		
Poweshiek, Grinnell	7.26		
Sac	7.00		
Shelby	6.66		
Sioux	3.84		
Story	6.35		
Wayne, Corydon	8.00		
Wayne	7.00		
Winnebago	5.79		
Winneshiek	3.99		
Woodbury	8.00		
Wright	4.19		
		$329.29	$28.06
New Members:			
Cass, Messena	$10.00		
Clay, Spencer	10.00		
Delaware, Manchester	10.00		
Jackson, Maquoketa	10.00		
Marion, Knoxville	10.00		
O'Brien, Sutherland	10.00		
		$60.00	
		10.57	$399.86
			$427.92

DISBURSEMENTS.

Speakers' checks	46	$ 5.00	
“ “	50	6.80	
			11.80
Office Expense	39	3.00	
“ “	44	11.20	
“ “	48	29.21	
“ “	45	2.00	

" "	43	5.00		
" "	49	1.50		
" "	41	10.00		
" "	40	8.50		
" "	53	4.05		
" "	51	4.02		
			78.48	
Brought forward		$ 90.28		$427.92
Reporter	52	36.40		
Banquet and hotel	47	144.55		
Refund	42	7.00		278.23
Leaving cash on hand May 1, 1918				$149.69

The Chairman: Gentlemen, you have heard the treasurer's report. Are there any corrections or objections? If not, the same stands approved. By the way, has it been customary to appoint an auditing committee?

The Secretary: In the past the Auditing Committee was the Executive Committee.

The Chairman: All right. * * * It has been suggested; in the absence of our regular Executive Committee, that an Auditing Committee be appointed. Do I hear a motion to that effect?

F. A. Gatch (Adair): I make the motion that the chair appoint two members to take the place of President Beckner and Vice President Barber.

The Chairman: Is there a second to that motion?

L. R. Pike (Harrison): Second the motion.

The Chairman: It has been moved and seconded that the chair appoint an Auditing Committee. Are there any questions? If not, those in favor of that motion will signify by raising the right hand. * * * Opposed the same sign. * * * The motion is carried.

I will appoint on that committee Mr. W. R. Schofield from Hardin county and Mr. L. R. Pike of Harrison county.

The report of the Credentials Committee will be held in abeyance, as suggested previously.

The next on the program is round-table talks. This is the big end of the program. I don't know whether we want to start any of this before lunch, or not, as it is nearly quarter to twelve. This meeting is thrown open to everybody, and we would like to hear from everybody. I think it would be well to open up the discussion on some particular subject and carry that subject thru to a conclusion before we start on another. If we don't, we will get confused. Now, the meeting is open to you, gentlemen.

W. R. Schofield (Hardin): I would like to hear a matter discussed by the members, as to whether we could take up with the State Board of Agriculture and have it put thru the legislature, in order to receive state aid only by the different fair associations who are members of this association and who attend this meeting. I would like to hear that discussed by some of the older members at this time.

The Chairman: The suggestion by Mr. Schofield is a timely one. However, my attention has been called to the fact that that subject has been put on our program and will be discussed by Mr. E. J. Curtin of Decorah.

Mr. A. R. Corey: I just received a telegram from Mr. Curtin saying that he arrived home from Chicago very sick and it is doubtful if he would be here at all. I am sure that he will not be here, for if he were to be here today he would have come last night at seven o'clock.

The Chairman: It is therefore possible that we will have to assign that topic to someone else, in the absence of Mr. Curtin. However, I think best to let the matter stand until the topic is brought up for discussion on the regular program, which comes sometime this afternoon. In the meantime we will procure some one that will volunteer to take up the discussion of that topic.

The Chairman: Now, gentlemen there are many other subjects that are to be brought up here at this meeting that will be of interest to all of us. Let me hear from some one else on some other suggestion.

Mr. Bacon (Clay): Mr. Chairman, I think this subject should be brought up at this time and discussed—what attitude the county fairs of Iowa are going to take with reference to the Horsemen's Protective Association that is going to be organized on Monday at the Chicago horse sale. It is an organization consisting of race horse owners. They have announced fourteen points covering objectionable features of the present rules and regulations covering horse racing and conditions generally. They propose that the entrance fee charged shall be added to the purse, and many other things. If this organization is formed among the horsemen, and it looks like the horsemen are going to form a union, it is going to materially hurt some of the smaller county fairs, because they cannot give as much money in their purses as the larger fairs, and therefore some program ought to be arranged and carried out to protect us against this organization.

The Chairman: That is a timely topic. Mr. Cameron is with us today. He was in Chicago last week and probably has got a fairly good idea of what has been proposed.

C. E. Cameron (Buena Vista): I would like to know if any one present has the circular containing the 14 points. I had one and carried it around in my pocket for two or three weeks, but on my return home I changed my clothes and must have left it at home. I think the most important thing is to read the fourteen points—I haven't committed them to memory. Of course, there are a great many things among them that are all right, and there are others that are dead wrong.

Now, as the chairman has stated, I think the horsemen and managers are going to hold a meeting in Chicago on the 18th. They have got some pretty absurd propositions. For instance, there is one point which says that no race may be declared off if there is one horse to start. Imagine what that should do to the race-loving public! We all know that it is simply outlandish to agree to allow a man to go out there and walk his horse around the track, with no competition, and collect $400 for it. This question has been brought up: Why should horsemen simply race for their own money? My experience with county fairs has been—and it has extended over quite a long time—something like this: If you take an average of the county fairs that, say, hang up about three thousand dollars in purses, and take it one year with another, it is going to cost that county fair about 50 per cent of the original purse they put up. They give eight purses of $400 each, that would be $3,200, and it would cost $1,600 to put on those races. They get back about 50 per cent on that purse. The question is whether the average county fair can afford to put up that $3,200 and give it outright without any deductions. Of course, they use the argument that if we hire vaudeville acts, we pay them as much, and we don't ask any deductions for putting on the acts. That is true, and I think you will all bear me out in the statement that horse racing is one of the best acts we have at the county fairs. There is no question about that, because we all know that when it rains and the horses cannot run we have no grand-stand on that day, in spite of the performance of the vaudeville acts. I was figuring it up in my own mind along this line: Take a $400 purse as a basis,—if we reduce that to, say, $200, that is what it would cost the association; but suppose, instead, we offered a $200 purse and all entrance money, and suppose we make the entrance fee $10 and there were ten entries in that race,—that would be $300, with no deductions. On a basis of that kind that would give the race within $60 of what the original offer of $400 would give, with 5 per cent to enter and 5 per cent deducted.

I am very sorry that Mr. Curtin is not here this morning, because he had a paper on that very subject in Chicago, which was very well gotten up. He had it all figured out, what it would cost all the associations, and so on. In the matter of overcharge for stall rent and hay, overcharge for drayage to and from the fair grounds, and such matters. Those are pretty hard propositions for the fair to take up and control, but I think there ought to be some arrangement made whereby we could be a little more lenient to the horseman.

In regard to the suggestion I made about offering a $200 purse, that would necessitate every fellow entered to pay $10, and with ten or twelve entries it would add quite a bit to the size of the purse. And that in turn would necessitate the management getting the entry fee when the horse is entered, else the man that won the money would come to get his purse and you would have only a part of the purse, because all the horsemen hadn't paid their entrance fee. You would tell him that, but he would say, "It's your business to see that they do pay. I am entitled to so much money on this race," and he would be in the right about it too.

I haven't got any suggestion to make of a definite nature on this proposition, but I would like to hear something more from the members present as to what they think of it. I am simply bringing the matter up for discussion. It is a question of how far we can go in offering purses to the horsemen. The other features of the fourteen points are just regarding the horsemen's interest, and things of that kind, and that is what they have to work out in Chicago when they have their meeting. But the question for this association is just how far, and to what extent, we can be liberal with the fellow that comes to our fair to race.

The Chairman: Gentlemen, in connection with this discussion there is some valuable matter in this report of the county and district fairs for

1918. I call your attention to it. It is a matter to take into consideration before we enter this discussion. As a matter of fact, the racing game is in a serious predicament. We find from this report that seventy-eight of the county fairs held races and paid out $144,996 in speed premiums. The entry fees collected amounted to $42,715, leaving the net cost of the racing programs at the seventy-eight meetings $102,281, or an average cost of $1,311 each.

Now, estimating an average of thirty or thirty-five horses at each meeting, the horseman would receive (provided the money was equally divided) about $40 for each horse in their stables. Information secured from the horsemen shows that it cost on an average of $60 a week to campaign a horse at the county fairs. From these deductions, which are based on averages, it is readily seen that racing horses is not a very profitable business; in fact, the owners are putting up about half as much as the fairs for the privilege of racing their horses.

I want to bring this out before we enter this discussion as a matter of record, and as a matter of statistics. As it is at present, it is a serious problem for the fairs as well as the horsemen. I understand that the South Dakota State Fair this past year tried out a proposition in which they added their entry fee to the purse. I wonder if there is any one in the room familiar with that proposition and knows how South Dakota came out?

C. E. Cameron (Buena Vista): I have had several conversations with Mr. McIlvaine with regard to that, and he said that they had more horses this year than they have had for a long time. They put that arrangement in force because they were at the end of the circuit and for that reason were always unfortunate in getting the horses there for the races. Naturally, a state fair can better afford to pay these amusement features than a county fair, and Mr. McIlvaine said his purses averaged between seven and eight hundred dollars, with the entrance fees added to that. Mr. McIlvaine also told me that instead of giving as large purses this year as in former years, they were going to make the purses all straight $500, with the entrance money added. That is the arrangement Mr. McIlvaine has come to with regard to the speed department for the 1919 fair, and he was very much pleased with the project that he had in force last year at the state fair in South Dakota.

Mr. Chairman: Well, gentlemen, this subject is open for discussion. Do I see any horsemen here? Are there any horsemen in the room? I would like to hear from George White of Malvern.

George White (Mills): Gentlemen, I haven't really given much thought to this business. I am a horseman and still interested in the fairs. I am really on the fence and not in position to say much about it today—what would be best. While I really think that the smaller county fairs giving, say, a couple of hundred dollars with the entrance maney added, might be a better proposition, I am up in the air at the present time and don't know which is best.

The Secretary: I am always in a quandary why they offer a $400 purse and then pay only half. There are only a few points about the horse question—give them all the money you can afford, but make a penalty attach to them if they do not show up. I am in favor of making a flat purse, and that the additions thereto might be governed by conditions in your immediate vicinity; but I am in favor of making it obligatory on the part of the horsemen to put up their money when their entry is made, and if they don't come they forfeit that money. It seems to me a ridiculous proposition to ask that a race be not declared off if there is only one horse there.

George White (Mills): I would suggest a way that might prove to be a good proposition: If you are giving a purse of $500, say, and added all money secured from the $10 entrance fee, in order to protect yourself you need only to refuse to enter the horse unless the $10 fee was included in it. Then you would know where you were at. It is just as easy to send the $10 at one time as at another.

Mr. Christenson (Boone): What is the difference between offering a purse of $400 and not charging an entrance fee and giving $200 and charging an entrance fee? In our own case, last year we gave a purse of $400 and charged an entrance fee. I would like to hear it discussed.

The Chairman: Taking as a basis Mr. Cameron's suggestion that we are required to pay about $200 for each class of race that we advertise and get, and that is about what it does cost us, from $180 to $200, if we take it on the basis of added purses, and there are ten horses there, there would be $100 to add to the purse making the horseman $150, while under the old plan, with a $400 purse, he would receive $180, or $30 more. That would be the share of the man that wins first money, however.

Mr. Christenson: Couldn't you get more horses to your fair without paying the entrance fee? If they didn't have to pay the entrance fee, the men that come in fifth, sixth or seventh, outside of the money, wouldn't have to pay anything.

Mr. Whetstein (Louisa): The $400 purse would be all right if we could afford it. The fair would have to pay all of it out, however, and it would be the horseman's money. Taking up this subject, you secretaries and speed superintendents, you have the horsemen to deal with, you know what it means when you have ten or fifteen entries for a race and when the horsemen get in on the ground you have about seven or eight who feel that they have a chance for the money and the balance of the entries are fellows that know they cannot get in the money. There is the problem. What are you going to do with the fellow who knows that he cannot get in the money? Is he going to spend $10 to get in the match? You say to a horseman, "I want you to bring your stable of horses over to our fair." When he gets there and looks the entries over, he thinks he has one horse that can get in the money and two that cannot, but if you ask him for cash in advance he will not bring any of his horses.

The present arrangement is a good proposition for the men who are training colts. If a horseman has a bunch of colts which are run to give them an education, he is willing to pocket his loss if he doesn't get in the money; but if he had to pay his entrance fee in advance he will get out of the race game. If you put that suggestion into practice, you will find a great many men who will have to send their horses to the stable. I don't blame the horsemen for getting up some kind of organization to protect themselves. A horseman told me last year, "You fellows put up a $400 purse here, and if we win we don't even get a chance to look at half of it; instead of it being $400 it is only $200." If we have got to meet that problem, it seems to me that we have got to put the purses where we can afford to give the amount of money that we advertise for the races. Make them pay cash if we cannot do it in any other way, for if you start ten horses you will have to pay the money. I think there is no question but the horsemen will bring about some such rule, and we have got to meet it.

M. E. Bacon (Clay): I think Mr. White's suggestion about the $10 entrance fee with a $200 purse being payable in advance is a good suggestion, for this reason: Take two fairs, both being held in the same week in Iowa, and Mr. Horseman makes entries at both places. He gets the list of horses entered and discovers that there are ten horses entered at one fair in his class, while at the other fair there are twenty horses entered. If there was no penalty attached, he would go to the fair where there were but ten horses entered. However, by demanding the $10 in advance, he would only enter in one place.

Carl Leytze (Woodbury): I would like to state that at Rock Rapids every man that entered his horse paid $10 entrance fee. That is, he either got entrance there or at the South Dakota races.

C. E. Cameron (Buena Vista): I just carried this computation out a little bit farther. On a $400 purse the man that wins first money wins $200 of that purse, but he has invested 5 per cent to enter and 5 per cent on the purse, which brings it down to $160. The next man wins $100 of the purse, less $40, leaving him $60. The third horse wins 15 per cent of the purse, or $60, less $40 deducted, leaving him $20. The fourth horse wins 10 per cent or $40, and after he pays what he owes he breaks even. That is under the present arrangement. Under the suggested plan, the first horse would win, with a $300 purse, $150, and it would only cost him $10, leaving him net $140. He is just $20 loser. The second horse would win $75, and deducting $10 to enter, leaving him $65. In other words, he has $5 more than under the other plan. The third horse would win $45, and after deducting his entrance fee of $10 he would have left $35. In other words, he would be $15 ahead of the other arrangement, because he would only net $20. The fourth horse would win 10 per cent or $30, and after deducting his entrance fee of $10 would have $20 left. In other words, he would be $20 ahead of the other plan.

Under this second plan, it is true that the first horse earns less, but on the other hand the others win more and there is some inducement for them to stay in the game. You all know from experience that it is the "bear-cat" that kills the game. No man will take his stable out when the other fellow is winning week after week while he is getting nothing. Under the present plan a man cannot afford to win only third and fourth money, but under this proposition every man comes out a winner. Therefore, don't you think that the future success of the game is dependent upon our seeing that the second, third, and fourth horse fellows get something out of it, than to have the man who owns a "bear-cat" win it all?

Another thing, the article saying, "No declaring off of races if there is one horse to start." I have thought of this: You should make your entries show that it requires three horses to start. If there aren't three horses,—if there are only one or two horses there, I would give them all the entrance money. If there were ten entries there and only two to start, I would simply say, "Gentlemen, that money doesn't belong to us, it belongs to you", and then I would give it to the horsemen there on the ground ready to race. I think in that way we could develop a spirit among the horsemen whereby we could further the interest in the game and at the same time give the fellows who are not winning first and second money a chance at the purse. He could then go on to the next town and try for another purse without having to pay $40 and win nothing out of it.

I think this is a pretty important proposition. Take it in the American Registry Association. Do you know that the American Registry Association in Chicago, which takes care of the registration of Standard-bred horses, has registered 75 per cent less horses this year than they did just a few years ago? We know that there are places where they do not have any horses now. I know a fellow that went out this year with a string of horses, and they didn't pay him enough on the whole show to compensate him for his time. And that is the situation we will have to meet unless we can encourage the fellows to come in with their horses. So I say if we deduct from the winning horse and divide it up with the second, third and fourth horses, they will stay in the game.

There is another thing: I think the proposition of a record bar after a certain time is a detriment to the game. You can take a pretty good horse over a circuit, a "bear-cat" so-called, and some one says, "no record after August 1 or July 15", and the owner can go easy up to that time, but when the bar applies they let 'er out and burn up the circuit, and those fellows that have been winning everything are the greatest reason why our late meetings have been a failure. If there is no bar after a certain time, the horses are entered in the class they belong in and in that way furnish the right kind of entertainment. If a horse has a record of 2:10 after the bar applies, and enters in the 2:20, the fellows with the slower horses get discouraged and ship home, and they are the fellows who ought to be encouraged to go on to the next fair and make your fair a success.

The Chairman: It is quarter after twelve now, and I wonder if you want to adjourn for lunch and take this matter up immediately after lunch. Let us be back here at 1:30. By the way, I want to call your attention to the fact that at 6:30 tonight is our banquet in this hotel. Remember that you all buy your own tickets, and you can get them from Mr. Lauer or Mr. Gatch. They will be here at the desk at 1 o'clock and you can get the tickets between 1 and 1:30, or after the adjournment of the afternoon session. If there are no objections, we will stand adjourned until one-thirty.

TUESDAY, 1:30 P. M.

The Chairman: Gentlemen, we will now come to order. The first thing on the program is the continuation of discussion we had up in the forenoon session under the heading of "Round Table Talks" on the racing proposition, purses, etc. I think most of you were here this morning and heard the discussion. If you please, we will carry that on further. Mr. Ed Allen, who is a campaigning horseman, is somewhere about the room. We would like to hear from him.

Ed Allen (Indianapolis, Ind.): I have been out of the room and don't get the drift of things. What is under discussion?

The Chairman: We would like to hear from you as to how best to get together on the matter of purses—something that will be satisfactory for all concerned.

Mr. Allen: I never run any fairs, but I have raced some horses, and I will tell you what I think—we need more money. We cannot race horses now like you could once, with double the expense. Where you put up $300 for a race once, you ought to put up $600 now.

The Chairman: It was suggested, Mr. Allen, here in the forenoon discussion that the entrance fee be eliminated, a certain purse be put up by each of the societies, and to that purse add the $10 entrance fee. What would you think of a plan of that kind?

Mr. Allen: It is all right, if you make the purse big enough to start with.

The Chairman: There is a limit to the purse that the fairs can offer, of course. That is the problem.

Mr. Allen: I don't know how you are going to do, gentlemen, but you will have to do something if you want the horses and get them. There is no other way to figure that out. You will have to change the thing around somewhere different than it has been. They tried that plan, I believe, at Huron, didn't they?

The Chairman: It was tried last year, and from reports that we got on that, this morning, it was very successful.

Mr. Allen: That is a state fair, of course.

The Chairman: That's a state fair, and I was told this morning, and it was right, that the purse was $800 that they offered, in addition to the entrance money.

Mr. Allen: Well, of course, I wouldn't know what the different fairs could afford to give, but I do know this, that if you want the horses, and expect to have them, the fair associations will have to give the horses a chance to earn some money, because no horse now can pay expenses for $300 purses, even if he wins half the time.

The Chairman: Well, this is a timely topic, and we would like to hear from any one in the room who might be able to throw any light on the proposition, or offer a solution.

Mr. George White (Mills): Mr. Cameron made a remark a while ago that it would be a temptation to horsemen if there were two meetings in the state at about the same time. I take it, from the horseman's standpoint, that it would be a benefit. If the racing was conducted as at present, when you enter and don't go, you hold your $20 just the same, and if conducted the other way, you get just as much good out of it as Mr. Cameron had it figured out with a $200 purse. But with two meetings in the same week, I might want to enter at both places. I can enter at both places just as cheaply as I could under the old arrangement at one place, and there might be ten entries at one place and twenty at the other. You might look over the two entry lists and find two or three bear-cats in the one and find none at the other. Wouldn't it really be a benefit for the horseman to have the two meetings the same week, under this new plan?

Then, on the other hand, some one was speaking of the later meetings, that we couldn't afford to give $200. If you will notice that they have two or three track records this fall. They had about thirty meetings this fall at which they were giving $300 purses. If you have only six entries, it is costing you $200 anyway, and how many of the later meetings averaged much over six entries to a race, straight thru? It is only costing them, then, $200 anyway, and the new plans will cost them $200 and the horseman is getting more out of it than the other way, because they are paying the association $200 with the six entries, and the other way they are getting the $200 and the $60 extra, so that it seems both ways it would be a benefit to the horseman.

The Chairman: Gentlemen, this is open for discussion. We would like to hear from some more of you. All should participate in this. If there are no further remarks on this topic, we will pass on to the rest of our program.

I would say that the matter is now up to the Resolutions Committee and they will prepare resolutions in connection with this proposition to meet with the American Trotting Association or the National Association of Fairs, wasn't that the plan, Mr. Cameron? The plan of this resolution was to consult or confer rather with the National Association of Fairs with regard to the proposition of purses?

Mr. C. E. Cameron: They had that matter up last week, but our time was so limited that nothing was done. Mr. Curtin had a paper on that proposition, and I am sorry that the matter did not get sufficient discussion up there, but I think the thing will be discussed at the spring meeting in February. It seems the individual secretaries are in favor of the proposition in some way, but they did not have time to work out any definite plan. I spoke about our county fair association out here, and really think we will have to work it out our way. I have been thinking this matter over thoroly, and while we have been giving purses of three- or four hundred dollars, the expense has gone up and everything has gone up, and, as I said this morning, it is costing fairs about 50 per cent of the purse. If we should increase it one-half more, and then add the entrance fee of ten dollars, it would make a very sizable purse. One thing I ought to make clear right here,—I would receive no entry whatever that was not accompanied by the entrance fee of ten dollars. Absolutely not one! Because I'll tell you, as fair secretaries in years past, we have, if we could, boosted our entries—we would get a great big entry list showing a large number of horses on every program, and when the race actually was run there would be a lot of them missing. Now we have got to state actual facts. So I would say that before you put his name in the entry list, that $10 should be in hand.

The Chairman: Is there any further discussion on this? If so, we would like to hear it before we pass to the rest of the program.

W. F. Weary (Sac): I would like to ask Mr. Cameron's idea about the deposit of the ten dollars. You would accept an entry only in one class under that condition? For instance, a man has two classes, a "thirty" and a "twenty-five" trot. You would let him enter only one class for $10, and if he entered in two make him pay for it?

Mr. C. E. Cameron: Yes sir; because that is what has been killing our game more than anything else. He would enter in the "twenty-five" trot and pay his entrance fee, and then he would have to pay to enter the "thirty" trot. Otherwise, if one fee covered both entries, when we pulled off the "twenty-five" trot the winner would get all the entrance fees, and when the "thirty" came along there would be nothing left, and you would be up against it.

Mr. M. E. Bacon (Clay): I think this Iowa association of County Fairs is large enough that during the February meeting in Chicago of the American Trotting Association, where all these details are brought up, we could afford to send one or two or three representatives to that meeting and confer with them, because it will be a benefit to all the county fairs in the state of Iowa upon this proposition, and upon the proposition that Mr. Cameron brought up, of making the horse eligible at the time the entrances are closed for the fair. It is my opinion that when the American Trotting Association meets in Chicago in February we ought to have a representative there.

George White (Mills): I was just going to remark, with regard to closing dates and eligibility, suppose some circuit has four or five meetings and they all close on the same date,—how would you work that? If a horse gets a record one week, would you set him back to the close of the next week? What we are trying to get with this record bar is the making of a record three or months before.

The Chairman: Estimating the set-back and the bar, as I understand it, and make them eligible at the time they close.

Ed Allen (Indianapolis): I haven't anything to say except just as Mr. Cameron and this gentleman talked. It is a bad thing, there is no question about it, of allowing a horse to get a record of 2:12 in July, and then in September get into a 2:30 trot.

The Chairman: I think this matter will be covered pretty thoroly in the resolutions, and we ought to pass on to the afternoon program. The first thing on the program this afternoon is a paper entitled "Our Experience With Our First Fair", by M. E. Bacon, Secretary of the Clay County Fair, Spencer, Iowa.

M. E. Bacon (Clay): At this time, gentlemen, I wish to pay a compliment to the officials and officers of the Clay county fair. I was informed that there wasn't a man on the fair board who had any fair experience before, but they certainly carried their program thru without any hitches, and it seems that every man placed in charge of the different departments was the right man for the place. They worked hard, and the business men of Spencer did their part by closing their stores and helping to make the fair a success.

This paper was wished on me by Mr. Lauer, secretary of this organization. Mr. E. S. Perry, former secretary of the Clay County Fair was the one originally selected to present this subject, but, after I was selected secretary, succeeding Mr. Perry, I fell heir to the paper. I have been secretary of the Clay County Fair Association for only a little over a month.

I feel highly honored by being requested to present a paper at this meeting and also feel honored to represent a fair association that is a member of this great association of Iowa fairs. I think that Iowa has the greatest State Fair in the West and that no state in the union has as many good county fairs as there are in this state and that all these county fairs are progressive.

At the time the Clay County Fair was held this year I was not secretary of the Association and will have to tell you of the experiences of those who were in charge at the time the fair was held. I was present during the fair, having charge of the free attractions and the race program, acting as the official starting judge, and had ample opportunity of witnessing how the fair was conducted.

I will confess that at the time I saw the plans and specifications of the new fair grounds at Spencer, I was skeptical like most outsiders and did not believe that the people of Spencer and Clay County would be able to build such a fair grounds as the plans called for. However, when I arrived at Spencer on the Sunday preceding the fair, I made a trip to the fair grounds and was agreeably surprised to see such a high-class plant.

The Spencer Commercial Club made it possible for the people of Spencer and Clay County to have the Clay County Fair, not only by giving their official approval to the project, but also by getting out as individuals and selling and boosting the sale of stock. The result was attained principally through co-operation. Co-operation is united effort and exchange of ideas working in unison, and is really the parent of organization, and organization is the key to success. When you come to think of it an organization can not exist without the most hearty co-operation.

In the fall of 1916 it was decided to organize a fair association. Heretofore it had been the custom to hold every fall a one-day county picnic and barbecue, but the people were outgrowing this idea and readily accepted this other suggestion. The Clay County Fair Association was organized in the Fall of 1916 and was incorporated for $19,000. About this time, at the invitation of the Fair Directors, Francis Asbury Robinson, landscape architect of Des Moines, made a trip to Spencer for the purpose of conferring with the directors in regard to drawing up plans for the grounds. I might state here that these grounds consist of forty-five acres located just at the edge of Spencer and within one mile of the center of the business district, and were presented to the Fair Association by the Supervisors of Clay County.

Mr. Robinson made a trip to the grounds in company with some of the fair directors and viewed the land. He stated that it was an ideal place to build a fair grounds and he made a rough sketch of the grounds. At the fair board meeting Mr. Robinson offered to make a topographical survey and prospectus showing how the fair grounds would look when completed, and asking $500 for these services. Mr. J. H. McCord (who by the way is one of the live wires of Spencer) was the only director in favor of engaging Mr. Robinson to do this work. Some of the directors asked where this $500 was coming from and others asked if he were going to spend all the money of the Fair Association for a picture. At this time there was $19,000 worth of stock sold and to pay for the picture and plans it would cost one-fortieth part of the money on hand. Mr. McCord requested Mr. Robinson to proceed with the work of making the necessary drawings and picture and he guaranteed that he would receive the five hundred dollars asked for his services.

After the picture and drawings were completed they were placed in a show window of one of the leading drug stores of Spencer and caused considerable favorable comment. This display aroused quite a little interest in the fair and the picture and drawings helped the sale of stock in the new Fair Association and gave the directors a definite object to work for. Looking back the fair management feel that this money was well spent.

As soon as the building operations were started the directors saw that it would be necessary to increase the capital stock from $19,000 to $30,000 which was done. Later the capital stock was still further increased to $40,000. Owing to the lateness in the season and the fact that the grounds were covered with a crop it was decided not to hold a fair in 1917.

At a meeting of the Fair Board held October 22, 1917, it was decided to build the race track at once. The ground for the track was surveyed and staked out and the grading started. I want to say right here that we certainly have a fine race track.

After the work on the buildings had started in 1918 it was discovered that there would not be enough funds to build a grand stand this year unless additional stock was sold. There was not time enough to carry on a stock selling campaign so members of the fair board interested some of the business men of Spencer in the proposition. These business men organized the Clay County Grand Stand Association and sold $10,000 worth of stock. They made a contract with the Fair Association to build the grand stand on the fair grounds and the admissions charged at the grand stand were to be used to pay back the money invested by the stockholders. When these stockholders are repaid the grand stand is to become the property of the Fair Association. The grand stand has a seating capacity of 2500 people and next year the Grand Stand Association expects to build an addition increasing the seating capacity by about 2000.

Every one was compelled to pay grand stand admissions, officers, directors and stockholders included. The wife of one of the race horse drivers at the Clay County Fair complained because she had to buy a ticket of admission to the grand stand. "Why," she said, "I have been to a lot of fairs this year and this is the first time I ever had to buy a ticket to sit in the grand stand." She was told that this was perhaps the first fair that she attended where all the officers, including the secretary and president had to pay for the same privilege.

The general plans called for the main entrances and all buildings except the barns to be finished in stucco and this is being carried out. The buildings on the grounds at the present time consist of a grand stand, a woman's building, stock barns, speed barns and entrances.

The woman's building is a beautiful building costing $8000. It is a two-story structure fifty-six by fifty-two feet with an arched porch and cement floors and with toilets on both floors. This building was originally built for rest rooms for women and children but, due to the shortage of other buildings which could not be completed, it was used this year as an exhibition hall. When the other buildings are completed it will be used only as rest rooms for the women and children.

The following exhibits were displayed this year in the Woman's Building: Cut flowers and growing plants, bakery goods and oven products, fancy work, and an exhibit of dried fruits which was lent by the Iowa State College of Agriculture at Ames. On the first floor there were a check room, information desk, women's retiring room and nursery. On the second floor were the school exhibits, canned goods and Red Cross exhibits. The proceeds of the check room, amounting to $35, were given to the Red Cross by the fair management.

Due to the fact that all the buildings planned were not completed this year some of the exhibits were displayed in tents.

The agricultural department was placed in a large tent and this tent was filled to its capacity.

The chicken exhibits were also displayed in a tent. The premiums were all won by a traveling exhibitor who brought a carload of chickens to the fair and he had two or three birds entered in each class. He won about $250 in premiums and the local people were afraid to exhibit their chickens against this kind of competition. From experience this year this kind of exhibits will be eliminated next year and, in the future, competition for premiums in this department will be restricted to Clay and adjoining counties.

The cattle and hog barn was only partially built this year due to short space of time for erection.The portion completed this year was two sides which are 320 feet long and one end which is 225 feet wide. This building contained one hundred stalls and sixty pens. When completed this building will be 225 feet wide at both ends and 350 feet long and surrounds two judging courts. This year this building was used for the show horses, cattle and sheep. Next year it will be used for the cattle and hogs. A separate barn will be built for the horses and another for the sheep. The hogs this year were displayed in a tent.

There are two barns. One barn contains twenty box stalls. The stalls are ten by twelve. The other barn is built in a double L shape. This barn is forty feet wide and two hundred feet long containig eighty box stalls. These stalls were only eight by ten and at the fair time it was discovered that they were too small and since the fair they have been enlarged to ten by ten, which resulted in a loss of one stall in every seven.

The main entrance is made of stucco and consists of two towers fifty feet apart. These towers are fourteen feet square and forty feet high. Each tower has three stories, the first floor of each tower being used as offices for the secretary and the treasurer and as ticket booths. The other floors are used for store rooms. A large flood light is placed on top of each tower to light the grounds. This entrance is set back one hundred feet from the street and used for the pedestrians. To the north and fifty feet closer to the street is the automobile and driveway entrance which consists of two towers twenty feet high set forty feet apart and containing two gateways. The main entrances are beautiful pieces of work and I don't believe that any of the state fairs have entrances that surpass them.

It cost the association $1,000 to police the grounds. Policing was handled by a company of twenty-one soldiers from Mason City. It cost real money but proved to be a good feature to start a new fair with. The military police were on the job all the time and while on duty they had their bayonets on their rifles. It is the general opinion that the hiring of such an organization is the only successful way to handle a fair crowd. The soldiers showed no favors. The huge crowds were handled so well that there were no accidents of any kind. Not an automobile was smashed up, nor a person injured. No one was allowed on the race track or in the centerfield. At this time I will tell you of a number of incidents that happened during the week. E. S. Perry, secretary of the fair, was absolutely refused admittance through the auto gate on Tuesday morning and no amount of argument availed him. He was forced to go back to his office and get his official badge before he could get into the grounds. One member of one of the troops of performers on the free attraction program undertook to cross the race track for the purpose of getting a pail of water. He was ordered to halt and refusing to obey the command, the soldier in charge stuck him in the leg with his bayonet. One afternoon while waiting for his horse to be brought out to him on the race track, William Taylor, one of the drivers, who, by the way, was dressed in his race colors with his arm numbers on, stepped out on the race track to pick up some pieces of paper that were blowing around. He was ordered off the track by one of the military police but did not pay any attention to the command and was finally forced off the track at the point of a bayonet.

The carpenters worked on the grand stand and feed barn up to the very minute of the opening of the fair on Tuesday morning. When the gates were thrown open and the people started into the grounds most of the members of the fair board together with the laborers were busy picking up lumber and debris, especially in the grand stand, so the people could sit down.

The opening of the first Clay County fair was celebrated by a parade of decorated floats and automobiles from the business section of Spencer to the fair grounds on Tuesday morning at ten a. m. This parade was led by the T. Fred Henry band of Des Moines.

Governor W. L. Harding delivered the principal address at the formal opening of the first Clay County fair on Tuesday morning. This was followed by an address by R. G. Webb, president of the fair association.

The fair was a success from every stand point The weather was perfect and the crowds were large. The fair program was carried out according to schedule.

The race track is a half mile track with a one hundred feet home stretch and sixty feet wide on the back stretch. Eight horses can score abreast. During the Vinton, Iowa, fair which was held just two weeks prior to the Clay County fair, I talked to a number of horsemen regarding the new fair to be held at Spencer this fall. One horseman said that they were building a wonderful plant at Spencer but they had made a serious mistake when they built their race track by building the home stretch so wide. I told this horseman that I thought they had done a wise thing to build a wide track because most fair grounds that had been built for years possessed narrow tracks. And most fair managements have stated that if they were building a new plant they certainly would build a wide track. The track was somewhat wavy, like all new ones, but the footing was very good. It is made of black sandy loam, and when it becomes firm, it will be one of the fastest half-mile tracks in the country. The carpenters were working on the speed barns when the horsemen arrived on the grounds. The race track and speed barns were far beyond the expectations of the visiting horsemen. Nine races were pulled off during the week. The fields were not large but made up of high class horses. A track record of 2:08 1-2 was established by the pacing horse "Red Bearer," 2:08 1-2 and the slowest heat was 2:20.

There were two night shows with fireworks and free attractions and they proved to be a wonderful success, the crowds being large both evenings.

Added attractions consisted of a historical pageant showing the early history of Clay County and was presented by the Spencer High School with great success. This pageant was presented Thursday afternoon. On Friday the "Jackie Band" of thirty-eight pieces and a drill team visited the fair for three hours and entertained the fair crowd.

The Clay County fair grounds at the present time consists of forty-five acres of ground. Improvements on the grounds amount to $50,000 not including the grand stand which at the present time is owned by the Grand Stand Association. All the fair stock subscribed for has been collected except $5,000 worth. Shares of stock were sold for $100 a share. This stock is non-assessable with no dividends to be declared. There are 250 stockholders and the stock is owned generally throughout Clay County. At the annual meeting held in October this year it was decided that the capitalization of the Clay County Fair Association should be increased to $75,000. $25,000 worth of stock will be sold this spring and $25,000 worth of additional buildings will be erected.

The Chairman: Are there any questions that any one desires to ask Mr. Bacon? I presume he would be glad to answer any questions. If there are none we will proceed with the next number of our program, which is a paper on "Should County Fairs Have a Uniform System of Blanks and Bookkeeping?" This is led by A. R. Corey, secretary of the Iowa State Fair, who we will hear from at this time.

A. R. Corey:

Mr. Chairman and gentlemen: I did not prepare any paper on this subject, but I thought I might touch upon a few matters that would be of interest to the members of this association.

In our American Association of Fairs, we adopted the policy some years ago of using uniform entry blanks, and it has worked out to the advantage of the exhibitors and members. A great many of you who receive state fair premium lists, may have noticed that the blanks of the different associations are the same, so that when the exhibitor sits down to make entry at a number of shows, he finds them all the same. It makes it much easier for them, and consequently they pay very little attention whether they get hold of a Minnesota blank or an Iowa blank, for they are interchangeable. In fact you could go through our list of entries and find here and there an entry made out on the blank of some other state fair. I believe that possibly that wouldn't work out to so great an advantage to county fairs, but I do believe that it would be advantageous to have a uniform entry blank for livestock exhibitors, and possibly several other departments.

With regard to other blanks, I don't know; but it seems to me if your association has not already adopted a uniform contract for concessionaires, it ought to do so. That is another thing that the American Association of State Fairs has done. It has a uniform concession contract, which is iron-clad and bomb-proof, and there is no chance for the concessionaire to get out of paying, and if he does you will have a comeback at him at the next fair.

The next subject is uniform accounting. The first thing to be taken into consideration is to get something that is not too cumbersome, and it would be a rather hard matter and too much for the secretary if he were required to journalize all his entries and post them to ledgers and go through a methodical system of bookkeeping. A great many of the fairs have worked out a system on that. A great many of the state fairs in this district use what they call a "special column journal." The original entry on their receipt is made, the receipts are deposited with the treasurer and receipt taken for them, and that is posted in this journal and to the proper column. As to disbursements, everything is taken in by the fair treasurer and receipt taken for it and entered. There is no money paid to anybody in cash, everything is paid by check, and that is the original entry in your disbursements book. I went thru some of the accounts of county fairs and just sort of scheduled a few accounts that could be carried in the special column journal. I think the following items could be journalized in the manner I have suggested:

Stall rent, Horse department.
Stall rent, Swine department.
Pen rent, Sheep department.
Coop rent, Poultry department.
Space rental, Machinery department.
Space rental, Main building.
Concessions and privileges.
Entry fees, Speed department.
Forage sold.
Funds contributed for special premiums.
Advertising in premium list.
Ticket sales, outside gates.
Ticket sales, day grand-stand.
Ticket sales, night grand-stand.
Miscellaneous receipts.

Items carried in the column for "Miscellaneous receipts" should be posted to ledger accounts in order to arrive at a more detailed statement of accounts.

The following items will cover the principal items of fair expense and other expenditures, on the disbursement side of this book:

Department Expense.

I might say in parenthesis right here that the items of expense for the various departments are carried in this column and posted to ledger accounts opened with each department.

Salary of secretary and assistants.
Committee and board meetings.
Express, telegraph and telephone.
Postage.
Printing.
Office supplies.
Advertising.
Music and attractions.
Light and power.
Water.
Forage bought.
Cleaning and preparing buildings and grounds.
Premiums paid.
Indebtedness of previous years paid.
Miscellaneous expense of fair.
Improvements.

From the latter two columns the items should be posted to ledger accounts.

I don't know that there is much more that I could add to that. I don't know what system the county fairs have adopted, but I know that with us in adopting this special column journal it saves posting thousands and thousands of items. You simply make the entry in your book carried along in this column, and footed, and this doesn't make a large, cumbersome book. We adopted the system of using a book with short pages, and each blank occupies two pages in your journal, so that it gives you a great many more columns in the one opening than it otherwise could.

I believe that is all I have to say, Mr. Chairman.

The Chairman: Are there any questions? If not, we will proceed with the second speaker on this subject, Mr. P. L. Billings.

P. L. Billings: Mr. Chairman and Gentlemen: This paper was also wished on me by my friend, Mr. Stanberry. He wrote me while I was in Omaha that he had recommended my name as one to write a paper on this subject, and told me that I shouldn't be a piker. Also in the same mail I received a letter from the secretary of your association stating that he had taken the liberty of placing my name upon the program, so that's why I am here.

I didn't know that I had to deliver these notes to the secretary, for I don't believe he will be able to read them after he gets them, and if I make any mistake or hesitate at any time in the reading, it will be because I cannot read my own writing.

I thought it would be only proper first to give you a little outline of accountancy and the history of the development of accountancy, as well as the development of recognition of accountancy as it is now accepted. A great many people confuse an accountant with a bookkeeper or an auditor. This is not the case. Accountancy is something more than that.

Accountancy is a science which treats of the proper presentation of business facts, recording them in accordance with correct theory and principles.

In current use there is much confusion in the use of the word accounting. By many the term is used as synonymous with bookkeeping and auditing. Accountancy is closely related to economics, being the analytical branch of the same.

The principles of accounting are not new. As far back as the Babylonian empire we find their use well defined while in ancient Egypt accounts were kept upon papyrus and often cut into slabs of stone and masonry. In the Middle Ages methods of accounting were used which appear to have been very complete and accurate.

To modern times, in fact very recent years, we owe the most progress in matters of accountancy. To Italy we owe the origin of double-entry bookkeeping which is almost universally used at this time.

To England, however, we are indebted for placing accountancy in the ranks of the professions. It was there that associations of chartered accountants were formed, the members of which came to have a high professional standing and public recognition of the profession became thoroughly established. The examination was so complete and the requirements so rigid that the holder of a chartered accountant's certificate is almost universally recognized throughout the world.

Similar influences were at work in the Uuited States. In 1896 the first step towards legalizing accountants and regulating the profession was taken by New York in the passage of a certified public accountant law authorizing accountants with certain qualifications and under certain conditions to practice as Certified Public Accountants, and use the letters C. P. A. in connection with their name. Since then other states have enacted similar laws until now nearly every state has some law relating to Certified Public Accountants and the granting of certificates to those who qualify thereunder.

A Public Accountant is one who is engaged in work of accountancy for the business public. He is supposed to be skilled in all methods of accounting demanded by business, commerce and finance.

A Certified Public Accountant is one who has furnished proof to this state of being possessed of such qualifications by complying with certain statutory requirements.

In early years accountancy as a profession was very little recognized. As long as business was confined to simple retail transactions or minor manufacturing operations, no uniform method of bookkeeping was employed. As the amount of capital invested became larger this condition gradually changed. The corporation took the place of partnerships and individuals and distinction was made between government and private interests. With these changes bookkeeping became more complex, and the demand for better accountancy methods was the natural result.

It is surprising even now the number of individuals and small concerns that have practically no adequate system of recording their business transactions.

Statistics furnished by the Federal Trade Commission and obtained from other reliable sources show that by far the larger per cent of failures can be attributed to the lack of adequate systems of accounts. It is known that many of these failures could have been averted had the owner or manager kept in complete touch with the business through the right accounting methods.

Methods of doing business have been completely revolutionized in recent years until what was once considered of little importance is now being recognized as a most important factor to the success of every business and a complete and comprehensive system of accounting is now considered the first essential in the organization of a business. This has been brought about in several ways.

First: By the advance made by the profession in the building up of the standards of accountancy and admitting to the ranks of Certified Public Accountants only such as meet the requirements as prescribed by law.

Second. By the education of the business interests as to the value of proper accounting methods and the benefits to be derived from the employment of competent accountants to devise and install the same.

Third: By the changes in methods of doing business which require complete knowledge of the details of the business at all times, and

Fourth: The passage of laws requiring accurate data and information by the Federal Government and for the purpose of the correct preparation of income and excess profit tax returns.

Concerns who have installed an up to date accounting system suited to their needs and properly kept consider it one of their best investments.

With the above brief history of accountancy, its development and growth of recognition, let us proceed to the consideration of the topic assigned.

Should the county fairs have a uniform system of blank books and bookkeeping? My answer is emphatically yes.

You have assembled each year for the past ten years to exchange ideas and to discuss topics of mutual interest in order that you might improve your fairs the better to entertain and educate the public. In your efforts to improve the quality of your attractions and entertainments and to encourage better exhibits, you have almost, if not entirely, overlooked the matter of proper accounting methods which if installed and properly kept would not only enable you to render a complete report of your receipts, disbursements and operations, but would also furnish much of the data that will directly enable you to accomplish your aims, viz, the improvement of your fair in every respect and at the least possible expense.

If you have been benefited by the exchange of ideas as to the conduct of your fairs, you will most certainly agree that you would be benefited by the comparison of financial results which would be reflected through a uniform accounting system.

Your business is in a sense non-competitive, hence the divulgence of facts cannot work a hindrance upon any of your associations but must be of benefit.

Probably the first thing to be considered in connection with uniform fair accounting is its importance to those interested in the proposition.

First: To the stockholder. Most county fair associations consist of a large number of contributors or stockholders composed of the citizens and business men in the immediate vicinity. These people have invested their money not with the idea of direct pecuniary profit, but for the benefit that will accrue to the community. In the majority of the cases they do not expect the return of their investment. They do expect, however, and are entitled to know that their investment is judiciously and conservatively handled. That the investment and income from the same is properly and accurately accounted for and that no one receives benefit to which he is not entitled. The association is entirely dependent upon the confidence and good will of the public, and the stockholders or investors are entitled annually to a complete and accurate statement of the results of operation which can be had with ease and accuracy only through proper accounting methods.

Second: The importance to the state. Since the state is encouraging the county fair and under certain conditions contributes financial aid, it is proper to render annually a complete and accurate report to the state so that it can be shown that the public's money is being applied in the channels for which it was intended. It can be readily seen that a uniform report on all county fairs would be of inestimable value to the state.

Third: The importance of uniform accounting to the management. This point cannot be too strongly emphasized. Your business is one that is comparatively inactive for the greater part of the year and then is over in a few days. Your success or failure is dependent upon the quality of your entertainment, the disposition of the public and weather conditions. At the close of your fair you are apt to find yourselves with a nice surplus or a heavy loss. With a uniform accounting system you will be the better enabled to make your plans for the coming fair based upon the experience and records of former years. And the longer you use reliable and uniform records the better enabled you will be to make plans that will result favorably to you so far as to the two conditions over which you have control.

The next point for consideration is what principles are necessary in a uniform system of accounting for county fairs.

First: That the financial condition of the association should be clearly set forth in your records. Proper accounts should be provided that would reflect a true statement of resources and liabilities at all times. These statements should show a statement of both position and progress either forward or backward.

Second: That a complete check may be had on all items of incomes and expense. This check should be made annually as soon after the close of the fair as possible before any of the records become mislaid or destroyed. In the checking of incomes the records should be arranged so as to show the income from each source in detail. Income from concessions and rental of exhibit space should be supported by proper contracts and agreements. This should also be true of entrance fees, advertising and other sources of miscellaneous income. Daily admissions should be by tickets through turnstiles that register each person. This register should check against the tickets and they in turn should be checked against the cashier's sales both on the ground and down town sales places, if any.

Holders of passes should enter through a separate gate and proper provision be made to guard against the abuse of the pass privilege which may become a source of loss to the association.

The same careful check should be had upon the auto entrance as well as the grand stand, and if season tickets are used they should be so devised that they cannot be slipped through the fence and several parties enter upon the same ticket. The entire income from admissions should be finally checked against the cashier's receipts.

All expenditures should be supported by proper invoices, contracts or vouchers, and they should be made by check. They should be entered and distributed under proper captions as it is from these that the budget for next year's expenditures will be made. A classified arrangement of both income and expenses should be provided and the value of this uniformity for comparison is obvious.

Since the success of each fair is largely dependent upon weather conditions and the public mind, complete records should be kept of the weather in connection with the attractions and the attendance. This will be of value in determining the class of attractions that appeal to the local public, and the proper weather conditions to bring the crowds.

Third: The system should be elastic, so designed that it can be used with equal satisfaction during the rush of the fair as well as in the inactive season. It should be so arranged that special days or attractions may be added and accurately accounted for without confusion.

Fourth: The system must be simple, easy to operate, yet complete enough to furnish accurate and reliable data at all times.

In conclusion the ideal uniform system of accounts for county fairs must be to all interested as complete and reliable a record as a chart showing the ship's course across the sea.

The Chairman: There may be some questions that you desire to ask Mr. Billings. I might say this, if Mr. Billings will permit me, and won't blush, that he has audited the books of the Cedar Valley Fair for the last four years. We made it a rule to have our books audited annually, and Mr. Billings has done it very efficiently and satisfactorily. In fact, we feel up there that we couldn't get along without his services.

Are there any questions you desire to ask him? If not, we will proceed with the next topic, "Should County Fairs Be Represented at the State Agricultural Convention in December in Order to Get State Aid?" This subject was assigned to Mr. E. J. Curtin, but we have received word from him that he is sick and unable to be here, and I am therefore going to call on Mr. W. R. Schofield of Hardin county to take up this topic and lead out in the discussion, if he will. Mr. Schofield.

The Secretary: He is out on a telephone call.

The Chairman: Then we will throw this topic open for discussion and make it an open debate. That is a very important question. We are all getting state aid, and some of the fairs are getting state aid without ever coming to the State Agricultural meeting at all, or taking any part in it whatsoever. Who will be the first? Mr. Cameron?

C. E. Cameron: It is not a proper question for the Department of Agriculture to father. We would like to hear from you gentlemen here, and of course we are always glad to have you come to the annual meeting of the State Board of Agriculture, but this association is the agency that should take that matter up with the legislature.

E. T. Austin (Marshall): In order to start something, I will say Yes, and then that will open it up and if anybody wants to say No, we will talk it over.

The Secretary: I cannot for my part of it understand why fairs should not be represented here each year. I have been very much interested in the feature of the suggestion whereby we would compel fairs receiving state aid, through the agricultural board and not through this organization, to have a representative at the meeting of the agricultural society.

The success of this meeting and that of the agricultural society, depends upon the attendance. We have some ninety-odd fairs in the state, and if they were all here, with such a program as we are having here today, they would be enthused and get real good out of it. Mr. Curtin was familiar with the situation and realized the importance of insisting upon the attendance of all fairs at the agricultural society meeting, and that was the reason we took exceptional efforts to get him on the program. I am sorry that he found it impossible to be with us today.

I hardly think you will have any trouble—I am quite sure you won't—getting a bill passed by the legislature requiring each county fair receiving state aid to have a representative at the meeting of the state board. I think we ought to work with that in view and take some definite action, taking it up thru the agricultural board, providing that unless they were represented at the meeting of the state board of agriculture they would not receive state aid, which is an essential part of their livelihood. The agricultural board is the motor from which they receive their energy and enthusiasm for the coming year's work, and unless they do attend they should be prohibited from receiving the state aid.

The Chairman: We would be glad to hear from any one on this subject. The meeting is open to you, gentlemen. Is there any further discussion on this?

D. H. Graves (Story): I concur in the remarks just made by Mr. Lauer. This question was brought up last year, and I think there is not a secretary in the room that has had experience of this very nature in getting an audience in the local meetings and having the people get the benefit of the efforts that are put forth by two or three people to promote these fairs, but thinks as Mr. Lauer does about it.

The Chairman: Are there any other remarks on this topic? If not I think we are ready to listen to the report of the Credentials committee first. Mr. Mullen.

J. P. Mullen (Fonda): The Credentials Committee beg leave to report the following county fairs as having paid their dues and being entitled to participate in the activities of this convention. I will also add, if there is anybody here representing fairs not yet reported to the committee, we are willing to add their name to the list upon payment of dues.

The list reads as follows:

Adair, Greenfield
Buena Vista, Alta
Blackhawk, Waterloo
Blackhawk, Cedar Falls
Bremer
Buchanan, Aurora
Butler, Allison
Calhoun, Rockwell City
Clinton, Dewitt
Clay, Spencer
Cass, Messina
Cass, Atlantic
Cedar, Tipton
Davis, Bloomfield
Fayette, West Union
Guthrie, Guthrie Center
Harrison, Missouri Valley
Jackson, Maquoketa
Keokuk, What Cheer
Kossuth, Algona
Linn, Marion
Louisa, Columbus Junction
Lucas, Derby
Mahaska, Oskaloosa
Marion, Knoxville
Marshall, Marshalltown
Monroe, Albia
Muscatine, West Liberty
Mills, Malvern
O'Brien, Sutherland
Page, Shenandoah
Page, Clarinda
Poweshiek, Malcolm
Poweshiek, Grinnell
Pocahontas, Fonda
Shelby, Harlan
Sac, Sac City
Sioux, Orange City
Story, Ames
Winneshiek, Decorah
Worth, Northwood
Woodbury, Sioux City
Warren, Indianola
Wayne, Corydon
Adams
Hamilton, Webster City
Jefferson, Fairfield

As chairman of the Credentials Committee, I move the adoption of the report just given.

The Chairman: Gentlemen, you have heard the report of the Credentials Committee. What is your pleasure?

W. F. Weary (Sac): Second the motion.

The Chairman: It has been moved and seconded that the report of the Credentials Committee be adopted. Is there any question? If not, those in favor of the motion will signify by raising the right hand. * * * Opposed the same sign. * * * The motion prevails.

The next is the report of the Resolutions Committee.

G. E. Bliss (Adams): I would like to ask the secretary to read this report as it is a little bit dark in here and I can't see now as well as I once could. My eyes aren't as good as they were when I was a boy.

The Secretary (reading):

Resolved, That this convention as a body would suggest that the organization take some definite action in the matter of appointing a committee to bring before the Agricultural Board meeting at the State House on December 11, 1918, the question of taking definite action, such as appointing a committee as pertaining to the forming of a bill to bring before the coming legislature, requiring all organizations receiving state aid to attend the annual meeting of the Board of Agriculture.

Resolved, That we as a board can see the necessity of creating a larger budget for state aid to fairs, Iowa being the greatest agricultural state in the Union, and Iowa thru her county and district fairs is in a position to create one of the greatest agricultural resources in the world, so we, as a committee wish to bring before the body a request that, if after general discussion, you find the time opportune, that you take some action for creating a legislative committee that would be in a position to bring this before the legislature this year; any action you may take will meet the approval of the committee.

Resolved, That we recommend to the American Trotting Association that members will not be allowed to receive entries on horses who have records faster than the class they are eligible to at the time the entries close; in other words, members cannot advertise records made after August 1st when these entries close September 1st.

We further recommend that all entry fees must be paid at the time entry is made.

Be it further

Resolved, That this convention appoint a committee to confer with the State Board of Agriculture at their meeting December 11, relative to having some representation at the Horsemen's meeting in Chicago December .....

Resolved, That this convention extend to the officers of our association a vote of thanks for their untiring efforts to build up this association and for arranging for this meeting.

(Signed) Geo. E. Bliss
" L. R. Pike
" Roy E. Rowland

Mr. Bliss: I move the adoption of this resolution.

The Chairman: You have heard the resolutions read, with the motion for their adoption. Is there a second?

George White (Mills): Second the motion.

The Chairman: It has been moved and seconded that the resolutions as read be adopted. Those in favor raise your right hand. * * * Opposed the same sign. * * * It is carried.

Under these resolutions, it seems there is something open for discussion. In other words, they are only in a tentative form, as I understand it. Is that right?

G. E. Bliss (Adams): Yes sir.

The Chairman: I don't know whether you want to take up these matters further now for discussion, or not.

The Secretary: I understand in the first part there, the intention was that this body should bring the matter up to the Agricultural Board tomorrow, with regard to making it necessary to attend the agricultural meeting, and asking that action be taken.

The Chairman: This matter, then, will be taken care of by the appointment of a committee, in any manner you desire,—the committee to prepare resolutions for that purpose. What is your pleasure, gentlemen?

W. F. Weary (Sac): I move that the chairman appoint a committee of three.

H. C. Leach (Davis): Second the motion.

The Chairman: It has been moved and seconded that the chair appoint a committee of three to present resolutions to the State Board of Agriculture tomorrow bearing on this subject. Are there any questions? If not, we are ready for the vote. All those in favor of the motion signify by raising the right hand. * * * Opposed the same sign. * * * It is carried.

I will appoint that committee later, if you will permit me.

We ought to have a legislative committee, and it seems that the matter mentioned in this resolution should come under their jurisdiction.

The Secretary: I think that they should be notified of this resolution and that they may, if they deem it advisable, get busy.

The Chairman: The next is general reports. Have we reports of any kind?

The Secretary: There is no committee of any kind to make report at this time.

L. R. Pike (Harrison): I believe there is another resolution there in connection with the committee to take up with the Board tomorrow relative to representatives to be present at the horsemen's meeting in Chicago.

The Chairman: (reading)

Be it further

Resolved, That this convention appoint a committee to confer with the State Board of Agriculture at their meeting December 11th relative to having some representation at the Horsemen's meeting in Chicago December ....

Then it is up to this convention to appoint a committee to confer with the State Board. Who will you have for such committee?

Mr. Shipman (Muscatine): I move that the chairman appoint a committee of three for that purpose.

E. T. Austin (Marshall): Second.

The Chairman: Is there a question?

J. P. Mullen: I am not sure that I am fully informed on this question, but I have never learned what the Board of Agriculture has to do with the American Trotting Association or the votes cast by the state of Iowa members of the American Trotting Association, or any of their transactions in Chicago. I believe that each county and district fair has a vote at that convention. It is true that we have the president of the state fair here, who is a member of the American Trotting Association, but he does not derive that from his connection with the Board of Agriculture, he derives that by being elected at Chicago by the votes of the members of the American Trotting Association from all over the west and central west.

I am not opposed to this motion, understand, but the idea, if the county and district fairs of Iowa take advantage of their membership in the American Trotting Association, and they have the right to be represented at the annual election in some way, either in person or by proxy, that is the only way you can have your wishes made effective. Of course, the State Board of Agriculture will meet your wishes in the matter, but as a State Board of Agriculture, they have nothing to do with the American Trotting Association. If you should designate somebody to vote your proxies for you, that would be another thing.

The Chairman: As members of the American Trotting Association, we have a right to be represented at their annual meeting and have a voice in framing all these things. I don't see where any particular good could be done by appointing any special committee, although I don't want to criticize these resolutions. It says:

Be it further

Resolved, That this convention appoint a committee to confer with the State Board of Agriculture at their meeting December 11th relative to having some representation at the Horsemen's meeting in Chicago December ....

Mr. Shipman (Muscatine): I made the motion, and possibly I didn't understand what was wanted. I understand that there is a meeting of the Horsemen called, I think, for Wednesday of next week at Chicago, and my idea was that we might possibly want to be represented at that meeting. The American Trotting Association meets in February. You are all entitled to go there—I go myself every time, and the secretaries are missing a lot if they do not go; but if that is the meeting that is meant, I want to withdraw my motion.

The Chairman: This says at the Horsemen's meeting, which is the meeting proposed for Chicago next week.

George White (Mills): I made the suggestion to the committee myself, with regard to that.

The Chairman: This is a meeting to be held in Chicago next week, and it is the desire of the Resolutions Committee that we appoint a committee to confer with the State Fair Board who, in turn, will send a committee to Chicago to represent our interests.

The Secretary: I wonder if a committee of one will not be sufficient instead of having three?

G. E. Bliss (Adams): That was the idea that the committee had.

E. T. Austin (Marshall): I don't understand that the committee of three will go to Chicago, but the committee of three will confer with the Board of Agriculture, and then I suppose they would be the ones that would pick out the men to send to Chicago.

L. R. Pike (Harrison): I think the idea of the Resolutions Committee was that there are two or three members of the State Board at the meeting that expect to go to the Chicago meeting. The idea of the Resolution Committee was to have this convention appoint a committee to take it up with those members tomorrow and appoint one of the boys that are going in there to represent this body. Now, Mr. Cameron, I believe, is going in, and two or three others are going in. Any one of them can represent the convention here, and that is the idea of the resolution. Not the meeting of the Trotting Association, but the meeting of the Horsemen, to discuss the fourteen points brought up. I think the representation can be secured by appointing some of the members that are going anyway, without any expense.

C. E. Cameron (Buena Vista): You understand that this call that has been made by Mr. Magnus Flaws in Chicago is to the Horsemen, it is not to the associations, and whatever action this body takes in Chicago on next Wednesday will have to be submitted to the American Trotting Association for adoption. Now, we are all members of the American Trotting Association—we are the American Trotting Association. Every member here who is a member of the American Trotting Association has a voice in the rules and regulations governing the American Trotting Association. This body that will meet in Chicago next Wednesday no doubt will formulate certain rules to recommend to the American Trotting Association, where action will be taken, but it is at the American Trotting Association meeting where we want to be represented. Whether the rules asked will be a detriment to the fairs of this country I do not know, but we will say whether we are in favor of those rules or that we are not in favor of them. Where we want to be represented is at the meeting of the American Trotting Association in February, and each and every man here holds a membership in it. I don't think I shall go to Chicago for this Horsemen's meeting. Mr. Curtin was talking of going, and I am only sorry that he is not here to read his address on the subject to you. The object of the Chicago meeting is that they have got to make these rules and then take them up with our body before they can be put in force. Our body is the American Trotting Association and that is where we have got to make our stand against any unjust laws.

J. P. Mullen (Pocahontas): That is just the point I had reference to in my talk, that the American Trotting Association is the legislative body under which we race and under which the Horsemen race, and the men should go from Iowa to that convention—as stated before all have the right to go—but if you don't go, see that your proxy is sent by some one who will legitimately represent you, and I think that the members in Iowa have been a little derelict in that respect.

The Chairman: This matter I think will be properly handled by the three members of the committee that I will appoint and will get in consultation with the Agricultural Board. The points are well taken on that and I think really the place for it to be thrashed out will be at the meeting of the American Trotting Association in February.

The next is the roll call for all those having received county aid and having taken advantage of mutual insurance benefits. We will have to take those up separately, or will we call for them together?

The Secretary: We can call the roll and then each representative can give us the information desired.

Adair. Did you receive county aid? A. Yes sir. Have you taken advantage of the insurance benefits? A. No sir.

It might be well to explain that there has been passed a law which permits fair associations to insure their associations in mutual insurance companies at a much lower rate than the prevailing rates of independent companies.

Gatch (Adair): We are in a mutual now, then.

George White (Mills): These mutual companies, we have one in Mills county, the Mills & Pottawattamie Mutual Insurance Company,—and can they take it or turn it down if they want to?

The Chairman: They can take it if they want to, or turn it down, as they see fit.

George White: Last year we insured our buildings and grounds with a certain insurance company for one year at a time, and it came awfully high. I didn't think of the mutual at the time. I have a private barn on the fair ground and this company wouldn't take my barn because it is on leased grounds and we had quite a time to find some one to insure the barn, even though they were insuring the other buildings on the same grounds, and I was just wondering whether it is compulsory.

The Chairman: I don't think it is compulsory, but I find from investigation or what little inquiry I have made that most of the mutual companies are carrying fair grounds.

The Secretary: And that law also includes municipal buildings, which they were never allowed to carry before. (Continuing reading roll.)

Buena Vista:

C. E. Cameron: I will say for Buena Vista that we are in the same condition that Mr. White is,—our county organization has refused to take the insurance. I would like to find out when you call our names how many insure in the farmers' insurance organizations, and have them specify if they are insured in the farmers, or otherwise.

The Secretary: By the way, you receive the aid, do you, Mr. Cameron?

Mr. Cameron: Yes, sir.

The Secretary (continuing reading roll):

Blackhawk (Waterloo): Is Mr. Estell here? If not, we will pass on.

Blackhawk (Cedar Falls): Mr. Bailey is here, I think.

Mr. Bailey: We take both. We have the state aid, as well as carry insurance in the farmers' mutual. However, we carry insurance in both. We still carry some insurance in an old-line company—very little.

A. R. Corey: My understanding is that it is county aid for the buildings, and not state aid, that you are inquiring about.

The Chairman: Yes, that's right. We had better begin all over again. Do you receive county aid, Mr. Gatch, at Adair?

F. A. Gatch: Nothing much.

The Secretary (continuing reading roll):

Buena Vista:

Mr. Cameron: We received $150 for the school exhibits direct from the supervisors.

F. A. Gatch: We got $50, if you go down that small.

Blackhawk (Waterloo): Not represented.

Blackhawk (Cedar Falls):

Mr. Bailey: Yes, we got $1,000.

Bremer:

The Secretary: Prior to the passage of this bill we received $1,000, and we haven't received anything under this new bill, but our farmers' mutual insures our association up to about $18,000. In getting this insurance we use this argument: You own the buildings as individuals—the farmers are our stockholders—and therefore you are insuring practically your own buildings. We have water on the grounds. We insure in a mutual company and it cost last year something like $25.

Pocahontas (Aurora): Not here.

Butler (Allison): Not here.

Calhoun (Rockwell City):

We have county aid, but insure in an old-line company.

E. H. Graves (Story): These people who are receiving county aid don't say whether they are receiving it each year, or not. I don't know whether they receive it every year, or just once and are done with it.

The Chairman: The law permits you to get it once only unless the county owns the grounds, and then you can get a stated amount each year up to $1,000 maximum. If you don't own your grounds, you can get only $1,000, and that is all. That is the law as passed two years ago, and one that you should all get the benefit of.

The Secretary (continuing roll call):

Clinton (DeWitt): No response.

Clay (Spencer):

Mr. Bacon: No county aid.

The Secretary: Have you asked for it?

Mr. Bacon: No, I don't think they have. In fact, I didn't know about it until last night when I was coming down on the train with Mr. Mullen.

A. R. Corey: Mr. Bacon, didn't the county buy the ground?

M. E. Bacon: Yes, sir, they bought it and gave it to us.

The Chairman: Are you insured?

M. E. Bacon: I think they are insured in an old-line company, but I am not positive. I know the grandstand is insured in a mutual company, but I don't know about the rest of it.

Cass (Massena): Not present.

Cass (Atlantic):

A. We have never received any county aid—we could never get by with it. We carry old-line insurance.

The Chairman: Did you try to get county aid?

A. We tried several times. If the Massena county fair gets it, we want it, and the board of supervisors divide on it and we have never been able to get it.

Cedar (Tipton): Not represented.

Davis (Bloomfield):

H. C. Leach: We never did get any county aid. We made application this year. We carry old-line insurance.

The Chairman: You have made an effort to get county aid?

Mr. Leach: Yes, sir.

The Chairman: And it didn't succeed?

Mr. Leach: No, sir.

The Chairman: You fellows had better get busy politically and elect the right kind of fellows.

Mr. Leach: We did elect the right kind of fellow, and then he went back on us.

Fayette (West Union): Not represented.

Guthrie (Guthrie Center):

No aid; old-line insurance.

Harrison (Missouri Valley):

L. R. Pike: We never received any county aid. Insure in an old-line company. Our situation out there is this: The grounds belong to the city and the buildings belong to the association. Do you suppose that would affect us in any way in getting county aid?

The Chairman: The situation at Waverly is just like yours.

The Secretary: That doesn't make any difference; you can get your aid just the same.

The Chairman: You conduct annually a county fair?

Mr. Pike: Yes, sir; this year is the sixty-first fair.

Jackson (Maquoketa): Not represented.

Keokuk (What Cheer):

We don't get any county aid, and we don't use the mutual. They are not interested in any local fairs. The same company that writes around

Oskaloosa writes around our place, and the fair rate is naturally higher than the farm rate would be, and they don't carry it. We are in a stock company. The county supervisors do not live in our neighborhood and they don't like to spend the money in our part of the county.

Kossuth (Algona): Not represented.

Linn (Marion):

We get county aid, and insure in old-line companies. We got $400 this year and $800 last year.

Louisa (Columbus Junction):

We have never asked for county aid, and we carry old-line insurance.

The Chairman: Never tried to get it?

A. No, but I am going to try when I get home.

Lucas (Derby): No representative present.

Mahaska (Oskaloosa):

We have never received any county aid. We made application I think the first of the year three years ago when they organized and they were turned down. We insure in an old-line company.

The Chairman: Have you ever made application to your mutual company?

A. No, we have not.

Q. You don't know whether they would reject your application?

A. No, I don't know that they would.

Q. You will find it mighty beneficial, if you can make it.

Marion (Knoxville):

We have received no aid and haven't asked for any, and we are insured in an old-line insurance company. We are going to ask for aid and we are going to get it, too, Mr. Chairman.

Marshall (Marshalltown):

E. T. Austin: The county owns our grounds and the association the buildings. We haven't asked for aid, only in the way of fencing and things like that. We carry old-line insurance. I couldn't say whether we have ever tried the mutual or not, and Mr. Clark didn't, the secretary handles that, and I know it is all old-line.

The Chairman: I might say that at Marshalltown I was talking with Mr. Clark not long ago and he said they were going to get the aid there. They have never asked for county aid there, but they got the county to build fences and roads and things of that kind, on the grounds, which is better than the county aid. They macadamized all of the roads inside of the grounds there, didn't they?

Mr. Austin: Yes; and we worked the North-Western one year, too. They hauled the rock for us, and after we got the rock to us they told us they couldn't do it.

Monroe (Albia): Not represented.

Muscatine (West Liberty):

Mr. Shipman: We never asked for county aid and never got it. We carry our own insurance. We don't insure.

Mills (Malvern):

George White: We have got county aid, $500 a year for the last three years, and old-line insurance. I don't know how we will be next year with the county aid—the president of our association was elected a member of the board, and I don't know how it will be.

O'Brien (Sutherland): Not represented.

Page (Shenandoah): Not represented.

Page (Clarinda): Not represented.

Poweshiek (Malcom): Not represented.

Poweshiek (Grinnell): Not represented.

Pocahontas (Fonda):

Mr. Mullen: We have never carried any insurance on our buildings. After every fair we file a bill with the board of supervisors for $150 to cover our premiums on educational exhibits, and up to this time they have always allowed it.

Shelby (Harlan): Not represented.

Sac (Sac City):

W. F. Weary: We have never asked for county aid, but I think when I go home I will ask for it. We carry no insurance at all.

Sioux (Orange City). Not represented.

Story (Ames):

We receive $800 county aid and carry insurance in a state mutual—not a farmers' mutual. That is at a regular rate, with a discount at the end of the year.

Winneshiek (Decorah): Not represented.

Worth (Northwood): Not represented.

Woodbury (Sioux City):

Carl Leytze: I know that we are getting $150 for the last two years from the county, and our insurance is old-line.

Warren (Indianola):

We receive no county aid and carry no insurance, for the reason that the fair grounds at Warren are owned by a private party, both the fair grounds and buildings. However, we are completing arrangements for the purchase of these grounds on the stock plan, and we made the suggestion to the board of supervisors as to county aid and they promised us $1,000 for next year, provided we own it by the next fair time.

Wayne (Corydon):

We have received $500 of county aid, and carry old-line insurance.

The Secretary: That is all on this list. Is there anybody we missed?

G. E. Bliss: Adams county.

Adams (Corning):

I am a new man and I don't know, I was just put in last Saturday.

Q. Have you received the county aid?

A. No, sir.

Q. And the insurance is old-line.

A. We carry no insurance.

The Chairman: Is there any one else that we missed?

Voice: Hamilton county.

Q. Hamilton county. What town?

A. Webster City.

Q. You haven't been conducting a fair there, have you?

A. Just the last year, 1918.

Q. Have you received county aid?

A. No, sir.

Q. And your insurance is—what?

A. We have none.

Q. Are the grounds owned either by the association or by an individual?

A. We used private grounds last year.

Q. You are renting them, in other words?

A. Yes, sir.

The Chairman: Is there any other county that we missed?

Voice: Jefferson county—Fairfield.

Q. Do you receive county aid at Fairfield?

A. We have had $1,000 this year, but up to this time we have received pay only for the educational exhibits. The premiums on that sometimes run from $50 to $150, whatever it was. Our insurance is in the old-line company.

The Chairman: Any one else?

C. E. Cameron (Buena Vista): While on this subject, I want to say a few words. As long as we are in the legislative business here, we had better look out. I find there are a great many associations here that have been getting county aid for several years who do not own their own grounds. The law provides that those associations not owning their own grounds are entitled to a maximum of $1,000, and then they are done. The first thing we know some board of supervisors will get next to it and they will make us pay it all back. I think the law ought to be changed. Under the present law the board of supervisors has no right to appropriate beyond $1,000. The law as it now stands provides for a maximum of $1,000, as I understand it, and it looks to me that that is an old, obsolete law that has been on the books for twenty-five years, to my knowledge, and I think that it ought to be changed. We don't want to be caught up on that. Here is a fair that has been getting $600 a year for county aid, while technically speaking the board of supervisors hasn't any right to appropriate that, because it says you must not appropriate to exceed $1,000, and it seems to me that some action ought to be taken with regard to that matter. I don't know of any more appropriate time to have it changed than this winter, because there is always a cry for more food and more production. We have all been doing our part, and we have talked about our county agents, for instance, and we now recognize the great good they do, and yet John Coverdale of Ames had to work unceasingly for them for a long time before he succeeded. Today we have a county agent in every county in the state of Iowa, and the Board of Agriculture is trying to encourage the exhibiting of products by the counties by giving premiums to the counties showing the best exhibits at our state fair. We want the county agent to make the exhibit through the county fairs, for he is the man that is hired for the agricultural interests of the county and he is the man who should be encouraged to make a success of it. If the exhibit is properly gotten up for the county fair, it is taken down to Des Moines to the state fair, and because of the encouragement to agriculture that the fairs give, I think there is no more opportune time to get laws through the legislature beneficial to the county fairs of Iowa than the present time. They all say that the prices for agricultural products for the next five years are going to be high, and it is to the interest of every country to keep them high. Go to the board of supervisors, through your county agent, and say, "Help us to put on a good exhibit here, and then take it down to Des Moines" and give premiums to enable the county agent to bring it down here in competition with the other counties in the state. I think we ought not to overlook the possibilities of this matter during the next legislature. Iowa has been producing as never before, and the county fairs have been largely responsible. The county fairs are the feeders for the Iowa State Fair. If it wasn't for the county fairs putting their credit behind it, the Iowa State Fair would not be the success that it is today. We used to have a man up in our county who would come down to our county fair when I was secretary there with a bunch of Shorthorn cattle. We were holding a short course and he brought down two or three head of his animals (his name was Powell) and he says to me, "I want to show you a calf I've got here," and when I looked at it I saw that it was good stuff, and I said to him, "I want you to bring that calf down to the state fair." He says, "Pshaw, what's the use?" But I said, "You write me about the first of August and I will send you a premium list," and he did. He had that calf down to the fair, and he was the grand champion—he was King Cumberland. It is our county fair, boys, that feeds these things to the state fair, and I believe if you put it before the legislature in the right light, that they must start at home to boom this thing, we can do business with the legislature this winter.

The Secretary: There will be no special effort required to get that particular part of the law revised. The law at first contemplated that the fair couldn't receive any state aid unless the county owned the property, but it was revised to provide that all fairs might receive state aid for the one year, and it is my opinion that you can get it changed within two hours. After you get it out of the Appropriations Committee you will have no trouble with it at all. The board of supervisors can give aid for an indefinite time, up to $1,000, if they feel disposed to, and there should be no trouble getting that rectified, so long as you are not in business for a pecuniary profit.

George White (Mills): It was my understanding that they could give it each year if they wanted to.

The Chairman: This matter will be handled efficiently by the Legislative Committee. It is only a matter of amending that portion of the law in which it provides that counties own their own grounds. That is all, just eliminating that one sentence about counties owning their grounds. That can be stricken out and it will provide that all counties may receive $1,000 annually, at the discretion of the board of supervisors.

Mr. Wilson (Guthrie): It has been my understanding that where you go to the board of supervisors and ask for aid, designating what you want the money used for, if it was to be used for a building, that that was not considered as county aid. I was given to understand that in case we wanted an agricultural building or art hall, if the board of supervisors allowed us $100, $200 or $300, and it was used for that purpose, it wasn't counted in on that $1,000.

The Chairman: Yes, it is. The provision in the law is that the money must be used for improvements or paying off debts. The law provides that it must be used for improvements or paying an indebtedness on the fair.

Mr. Maxwell (Warren): Is it a fact that you can get your $1,000 by vote of the board of supervisors for one year, and then by a vote of the people you can get additional appropriations of $1,000 each year for ten years?

The Chairman: Yes, that is correct. But it is very difficult to get the board to call an election in the first place, and it is hard for them to get it through, even then. Cerro Gordo petitioned the board of supervisors and got their money there, but that doesn't happen very often.

C. E. Cameron: When this Legislative Committee presents any measure to the legislature, it is the duty of every secretary to boost with their members of the legislature. Don't forget that! Get the fellows at home to write personal letters to your representative and senator, telling them that you want it and need it. If we have concerted action all over the state of Iowa, they will simply give it to us, that's all there is to it.

The Chairman: It would help a lot to elect one of your supervisors from your fair board, or get one of the supervisors on your fair board, and a number of you have a member of the legislature on your fair board.

E. H. Graves (Story): I would like to know why so many fairs in the state shouldn't form a Fair Insurance Association and carry our own insurance, all of us, instead of dividing it up. I happen to be in the insurance business, and I think that the rate on fair buildings is exceedingly high, and I haven't noticed in the last four or five or six years, in all the time I have been connected with the fair association, of any fairs that have lost very many buildings, and I think it is the thing for this association to consider in the meeting a year from now, and if the thing can be reported on, I think we can carry our own insurance a great deal cheaper than we are carrying it at the present time.

The Chairman: The mutual companies serve practically the same purpose.

Mr. Graves: But let me tell you this, that there are very few of the mutual companies carrying fair buildings, for the reason that the stock company rates are so high on fair buildings that the mutuals are afraid of them, and you cannot get them to carry it in a great many mutuals. I know the mutuals in my county will not carry it.

Mr. Whetstine (Louisa): Right in connection with this, I made a great big protest on the rates we had to pay for the insurance, and the agents told me that the trouble was with the fair association very largely, itself. I think that about 75 per cent of the associations, when the fair is over, leave all the straw in their barns and stalls and pens, leave them all unlocked, and because no one lives on the grounds it is headquarters for all the crapshooters and poker games in the community. Isn't that the truth? And I think that is where most of your fire losses come from. I think we are making that rate high ourselves, by our carelessness. If we would take the precaution to close up our barns and clean them out thoroughly, I think our rates will be less—the rate cut down considerably.

The Chairman: If there is no further discussion on this, we will proceed with the program. The next in line is the election of officers.

J. P. Mullen (Pocahontas): Just before we proceed with the election of officers, I would like to know if we all wouldn't like to hear from Mr. John Cownie, a great friend of the state, district and county fairs of Iowa.

John Cownie (Des Moines):

Mr. Chairman and Gentlemen: I have taken a great deal of interest in our fairs as far back as I can recollect, and I have acted in many capacities for the various agricultural societies. I acted as director of the state agricultural society, then as director and vice president, and was then elected to the presidency.

Now, there is much that can be said in behalf of our agricultural societies. I can remember the time when there was very little interest taken in stock growing. The first hogs that I raised, I bought the male and sow from a man named Hoover, who had brought a shoat from Indiana, turned her out in the woods and underbrush growing along the Iowa river bottoms and claimed all the hogs running wild in that timber. Well, while working for a neighboring farmer for 50 cents a day, I had earned the princely sum of $2.50, and it was a question with me whether to buy a national bank or buy some hogs. Well, the hogs won, so I went to this man and wanted to buy a pair of hogs. He told me I could have a pair for $2 apiece, and of course I didn't have enough money for that and told him so, so he told me if I would pick out small ones he would sell me a pair for $2.50. I went into his cornfield and got some corn, took it to the timber and threw it down to the hogs, but I couldn't catch them. I shelled the corn and while they were trying to get it I grabbed a pair of small ones, and I had no more than turned around until an old sow grabbed me. The hog, of course, squealed, but I succeeded in getting a pair of pigs, got them on my back and carried them home. I had a litter of pigs the next year, and those of you whose memory goes back will remember that we didn't sell them by live weight and ship them because we had no railroads. The only railroad in the state of Iowa was the railroad from Davenport to Iowa City. The hogs were all slaughtered at home, and when slaughter-time came the neighbors went around from one place to another to help in the work. The hogs were slaughtered, split down the middle, a stick put in here (indicating) and bled out; and I remember when I took mine to the market the price was $2 a hundred if they weighed 200 or over, and if they weighed less they were $1.75 a hundred. Mine were the $1.75 kind. I remember a buyer picking up one by the tail and holding it up at arm's length he said, "John, is that a codfish?" And if you took hold of them by the ears, there seemed to be just about as much body in front as there was behind.

The first thing that gave me an incentive to get a better hog was a visit I paid to the county fair. Some one had brought a Chester White boar and sow to the fair, and had them on exhibition. I thought that was the greatest sight I had ever seen, was that Chester White boar, in contrast to the hogs we had at the fair. And so it was with cattle and horses, the fair was the leader, and today we would be raising poor cattle and wind-splitting hogs if it wasn't for the educational value of the fair, and the legislature cannot do too much for our county fairs. As President Cameron said, that is where it begins, at the county fair, and they are the feeders for the great state fair. But for the county fairs, we would never have a state fair. By all means, have your Legislature Committee see to it that a special appropriation is made to develop the best interests of our county fairs; build them up, and the state fair will take care of itself.

Now, there is one thing I haven't always urged, both in our county fair and our state fair, is to have some practical work. Now, we had addresses at our county fair in Iowa county—we had noted speakers come there to deliver an address, and do you believe it, some fellow with a snide game outside had most of the people and the speaker didn't have a half dozen. We had the same thing with our state fair—some fellow with a shell game would draw the crowd. Some people go to the fairs to learn something, but thousands of them go there to be amused and at the same time to be entertained; but I have found at our state fair where we had something educational, some practical demonstration of some sort, that we could draw a crowd.

One innovation we had at the state fair, when potato harvesters were coming in, was to plow up some ground on the inside of the race track, in the infield. I proposed to manure it with a large pile of manure, to see if we couldn't raise some grass over there. We had four or five men hired and they hauled some manure that afternoon, but it was very hot and dry at the time, and imagine my surprise the next morning to find that some one had set the manure pile on fire and burnt the whole thing up. It was accidental, of course, but I know how the match accidentally dropped; but we had a pile of ashes there and I did make them haul out the ashes, and we plowed them under on that sod ground. Some of you may have been there, and if you were you will remember that we had the largest crop of potatoes ever raised in the state of Iowa, but we put on about twenty loads of ashes on a half acre. We had an exhibit of potato harvesters, and they harvested those potatoes, while I gathered some of the largest ones and put them up on the separator. It was such a striking exhibit that farmers came around there and were interested in it, and I know of scores of farmers who carried away armsful of potatoes. But I will guarantee they will never raise potatoes like those again. That is one illustration of practical work and showing how to do it.

Now I want to talk to you gentlemen on another subject. You know as well as I do that there is not one man in a thousand nowadays that can build a hay stack or a straw stack or a grain stack, but from the Mississippi to the Missouri, and from the Missouri to the Rocky Mountains you do not see a well built straw stack. Now, I made a little personal investigation and am perhaps a little bit egotistical, but think I can build a straw stack with any man that lives or ever has lived or ever will live. I can build a stack that will shed water with any roof in the State of Iowa, but such a thing takes care in building. In these days farmers do not do that, and I believe that they don't like to see such work done. They don't know how to build a straw stack, a hay stack or a grain stack that will shed water when it rains, and we have come to the point now where they are threshing from the shock, one of the most pernicious habits that any man can get into. One of my tenants last year had his grain threshed from the shock—he was the last man on the round, and it cost me $250 as a result. That man could have stacked his grain but he didn't do it. If I was in the legislature I would compel men to stack grain, and it would save millions of dollars for the state of Iowa. You go around and see the way the farmers waste grain, and how they waste their land. I didn't happen to be born in America, but I am an honest, loyal citizen, and I like the old "Star Spangled Banner", but I object to seeing the grain fields painted with the stars and stripes where the planter leaves bare spots. Now, such things as that could be taught at our county and state fairs, and I believe that in a little while we will learn improved agricultural methods.

Why, gentlemen, it is a disgrace to Iowa! You will hear the annual report read tomorrow by the Crop Service Bureau of the yield of grain, and it will disclose that of corn it averaged less than forty bushels an acre. Why isn't it fifty or sixty? For forty years of farming I averaged over sixty bushels, taken over a series of years; but we have laws on this and that, and we have had a lot of agitation on account of the poor quality of the seed corn, and yet because men do not follow tried and proven methods of gathering and curing seed corn we have lost $500,000,000. And this year, while we have been told there was a big crop of corn in the country, we didn't have but about two-thirds or three-quarters of the stand of corn that we should have had. You cannot raise good corn without stalks, and you cannot grow stalks without good seed. I do not anticipate much trouble on account of seed corn this next year, because we had a good fall and our seed corn has been thoroly dried, but last year it didn't dry, and, gentlemen, there is only one way that seed corn can be saved and that is by picking it carefully and taking it into the dwelling house and fire-drying it. There is not a farmer in this audience, or in this state of Iowa, who gathers it in early September and puts it in his dwelling house, in his kitchen or in a room over the kitchen, with a register in the ceiling, and fire dries it,—but would have successful seed corn. There is not a farmer in Iowa who took care of his corn in this way who ever had to replant a hill of corn because of poor seed corn.

If you only get object lessons and get farmers interested in them, we ought to double the products of this state. It is a disgrace that we raise such small crops as we are doing. There ought never to be anything mentioned of seed corn or seed oats except along the lines I have mentioned, for there is no farmer in the country, no matter how humble his home, but has better facilities for curing seed corn than the best seed house in the state. Farmers as a rule eat three times a day, the cook stove is running, and there is no expense whatever for getting the heat, and that heat is the life of the corn. As I said before, the man does not live who saves seed corn as I have intimated and urged for forty years, but has success with it. I have spent more money than all the men in the state disseminating this information to the farmers of Iowa, at my own expense. I have sent them to every editor in the state under a two cent stamp so that the editor would be sure to open it, knowing that many people think anything under one cent postage is advertising matter. I have paid two cent postage and tried to get them to read it, and still we have losses and losses, and you know what the experience was last year. The farmers began in January to test and test, and you have all kinds of testing devices, but they are all worthless. You don't need a testing device if you do it my way, for it will grow in spite of you.

I thank you gentlemen for your attention.

The Chairman: Before we proceed with the election of officers, the two committees that the chair was to appoint will be composed as follows:

The Committee to confer with the State Fair Board: W. H. Shipman, Muscatine county; George White, Mills county; L. R. Pike, Harrison county.

The Resolutions Committee will be: F. A. Gatch, Adair county; W. R. Scofield, Hardin county; M. E. Bacon, Clay county.

Now we will proceed to the election of officers. What is your pleasure?

Carl Leytze (Woodbury): I will nominate H. S. Stanberry for president.

The Secretary: If not, we will proceed to vote. All those in favor any other?

G. E. Bliss (Adams): Second the nomination.

The Secretary: If not, we will proceed to vote. All those in favor of Mr. Stanberry as your president for the year 1918-19 signify by raising the right hand. * * * Contrary the same sign. * * * Mr. Stanberry is declared elected.

H. S. Stanberry (Blackhawk): I think you have broken all previous precedents with reference to the election of your president. I think it has been customary in the past to elect the vice president, but if that is your wish I guess I can stand for it.

The Chairman: The next office is that of vice president. Any nominations for vice president?

J. P. Mullen (Pocahontas): I nominate Andrew Stewart of Rockwell City.

W. F. Weary (Sac): Second the nomination.

The Chairman: Are there any other nominations? If not, we will declare nominations closed. Those in favor of Mr. Stewart as vice president signify by raising the right hand. * * * Opposed the same sign. * * * Mr. Stewart is elected.

The next is the office of treasurer. Do you have any nominations for treasurer?

J. Q. Lauer (Bremer): I nominate Mr. F. A. Gatch of Greenfield to succeed himself.

E. T. Austin (Marshall): I second the nomination.

The Chairman: Are there any further nominations? If not, we will declare nominations closed. All those in favor of Mr. Gatch as treasurer, signify by raising the right hand. * * * Opposed the same sign. * * * Mr. Gatch is declared elected.

The Chairman: The next is secretary. Do I hear any nominations?

H. C. Leach (Davis): I nominate Mr. J. Q. Lauer to succeed himself as secretary.

J. Q. Lauer: Perhaps some of you were not here this morning. I feel that you gentlemen should consider my resignation, not from the standpoint that I am tired of the work, for I am not, but I have been doing the best I knew how for four years and it seems to me that you should place some one else in there, to get some new ideas that will be beneficial to the association, Therefore I wish you would consider my resignation as I gave it this morning, and if you feel so disposed to put some one else in my place, you can depend on it that I won't feel hurt.

The Chairman: Gentlemen, you have heard Mr. Lauer's remarks. Are there any further nominations?

F. A. Gatch (Adair): I second the nomination.

The Chairman: If there are no further nominations, I shall declare nominations closed. Those in favor of Mr. Lauer for secretary will signify by raising the right hand. * * * Opposed the same sign. * * * Mr. Lauer is declared elected unanimously.

J. Q. Lauer: I thank you, gentlemen. I really did feel that I had done my part. I didn't say that because I was trying to get out of it. As in the past, I will do the best I can, but I do feel that we should have a more hearty co-operation when I send out requests for information. You should be more prompt in replying. It takes only a few minutes and three cent stamp. In getting out your pamphlet I must have information in order to make it interesting for the people who are putting it across. The attraction people have responded very liberally in making this pamphlet a possibility, but they are entitled to something that is going to be put in this pamphlet. I must have this information absolutely, or I have not the courage to go to work and ask them $10 a page to pay for it. They don't care for the minutes, but whatever I can put in there of interest to them will be the stuff they are after.

The Chairman: The executive committee is composed of the officers of the association. The district managers are elected by the convention to represent various districts.

The Secretary: You people should have district managers for each district shown on this map, which I have outlined. The first district has been managed by Frank Montgomery of Mt. Pleasant. This district is in the southeastern part of the state. It is for Lee, Van Buren, Des Moines, Henry, Jefferson, Washington, Louisa, Muscatine, Scott, Cedar, Johnson, Iowa, Jackson, Jones and Clinton counties.

The Chairman: Gentlemen, who will you have for manager for that district?

J. Q. Lauer (Bremer): I make a motion that we nominate Mr. W. H. Shipman of West Liberty.

Mr. Whetstine (Louisa): Second the nomination.

The Chairman: Mr. Shipman has been nominated for that district. If there are no further nominations, we will proceed with the vote. All those in favor of Mr. Shipman as manager for this first district, signify by raising the right hand. * * * Opposed the same sign. * * * Mr. Shipman is declared elected.

The next one is the second district, lying just west of that, composed of Decatur, Appanoose, Davis, Wapello, Monroe, Lucas, Clarke, Warren, Marion, Mahaska, Keokuk, Polk, Jasper, Poweshiek and Wayne counties, of which Mr. W. B. Griffin of Albia, Iowa, is the present manager. Who will you have for that district?

T. C. Legoe (What Cheer): I move that we have Mr. R. E. Rollin of Oskaloosa.

Mr. Whetstine (Louisa): Second.

The Chairman: If there are no further nominations, I will declare nominations closed. Those in favor of Mr. Rollin will signify by raising the right hand. * * * Opposed the same. * * * Mr. Rollin is elected.

The third district is composed of Fremont, Page, Taylor, Ringgold, Union, Adams, Montgomery, Mills, Cass, Pottawattamie, Adair, Madison, Dallas, Guthrie, Audubon, Shelby and Harrison, and has been presided over by F. C. Reece of Corning. Who will you have for that district?

W. H. Shipman: Mr. George White of Malvern.

G. E. Bliss (Adams): Second the motion.

The Chairman: If there are no further nominations, nominations are declared closed. Those in favor of Mr. White as manager for this district, signify by the usual sign. * * * Opposed the same. * * * Mr. White is declared elected.

The next is the fourth district, composed of Monona, Crawford, Ida, Woodbury, Plymouth, Cherokee, O'Brien, Osceola, Clay, Sioux, Lyon and

Dickinson counties, and Mr. R. J. Nott of Sutherland has been manager. Who will you have for this district?

C. E. Cameron: I nominate Mr. M. E. Bacon of Clay county.

W. F. Weary (Sac): I second the nomination.

The Chairman: If there are no further nominations, nominations are declared closed. Those in favor of Mr. Bacon signify by the usual sign. * * * Opposed the same. * * * Mr. Bacon is declared elected.

The next is the district composed of Buena Vista, Pocahontas, Humboldt, Wright, Hamilton, Webster, Sac, Boone, Calhoun, Carroll, Greene, Story, Hardin and Marshall counties, for which Mr. C. G. Caskey of Manson has been the representative. Who will you have for this fifth district?

Andrew Stewart (Calhoun): I nominate Mr. W. F. Weary of Sac City.

J. P. Mullen (Pocahontas): Second the nomination.

The Chairman: If there are no further nominations, I declare the nominations closed. Those in favor of Mr. Weary signify by the usual sign. * * * Opposed the same sign. * * * Mr. Weary is declared elected.

The next is the sixth district, composed of Emmet, Palo Alto, Kossuth, Winnebago, Worth, Mitchell, Howard, Winneshiek, Allamakee, Chickasaw, Floyd, Cerro Gordo, Hancock, and Franklin counties, of which Mr. S. D. Quarton of Algona has been manager. Who will you have for this district?

A. R. Corey (Polk): I nominate Mr. Quarton of Kossuth county.

F. A. Gatch (Adair): I second the nomination.

The Chairman: Any further nominations? If not, all those in favor of Mr. Quarton, signify by the usual sign. * * * Opposed the same. * * * Mr. Quarton is elected.

Now the next is the seventh and last district, composed of Butler, Bremer, Fayette, Clayton, Dubuque, Delaware, Buchanan, Tama, Linn, Black Hawk, Grundy and Benton Counties. Who will you have for that district?

J. Q. Lauer (Bremer): I make the nomination of Mr. J. L. Bailey of Cedar Falls as chairman of that district.

E. T. Austin (Marshall): I second the nomination.

The Chairman: It has been moved and seconded that Mr. Bailey be the representative of this district. All those in favor signify by the usual sign. * * * Opposed the same. * * * Mr. Bailey is declared elected.

Now, who will you have for your Entertainment Committee? That committee should be composed of three members. This past year the secretary and treasurer acted in conjunction with Mr. C. G. Caskey, Mr. S. D. Quarton and myself,—making five on the committee.

Mr. E. T. Austin (Marshall): I nominate the gentleman from Spencer, Mr. M. E. Bacon.

J. Q. Lauer: Second the nomination.

George White (Mills): I nominate Mr. C. E. Cameron, but he objects to it, so he won't act.

F. A. Gatch (Adair): I nominate Carl Huffman of Atlantic.

M. E. Bacon (Clay): Second the motion.

C. E. Cameron (Buena Vista): I nominate Roy Wilkinson of Buena Vista.

W. F. Weary (Sac): Second the nomination.

The Chairman: If there are no further nominations, we will suspend the rules and proceed to vote. Mr. Bacon, Mr. Huffman and Mr. Wilkinson have been nominated as your entertainment committee. Those in favor of these gentlemen, signify by the usual sign. * * * Opposed the same. * * * They are declared elected.

The Chairman: I want to call your attention to the banquet tickets for the evening. The program tonight is going to be fine, and maybe Mr. Lauer will tell you of it better than I can. I believe I will leave it to him.

The Secretary: At 6:30, in the room right on the opposite side of this corridor, on the same floor, is where we will serve our banquet this evening. No one of you should miss this banquet. The speakers are all here and we will not be disappointed in any of them.

The Chairman: If there is nothing further, a motion to adjourn is in order.

Motion made, seconded and carried that the meeting adjourn.

BANQUET HOUR—6:30-7:30 p. m.

The Toastmaster (H. S. Stanberry): Gentlemen, we will now come to order. The first thing on our program tonight is an address of welcome. We have a man with us who has been sitting here by my side for an hour and I know that he is "rarin to go". I understand that this gentleman is very generous, that he is willing to give away almost anything that Des Moines has that is good, and she has a great many good things, but I am sure that he doesn't want us to take away from Des Moines the "flu." I take pleasure in introducing to you Mayor Tom Fairweather.

Mayor Tom Fairweather: Mr. Toastmaster and Representatives of the Fairs of the State of Iowa: I want you to know that it is indeed a pleasant event for me to have this opportunity of being with you tonight and to bid you welcome on behalf of the city of Des Moines. Now, I know that the proper thing for me to say at this time is that as mayor of this city I extend to you the keys to the hospitality of the city.

Mr. J. B. Weaver, Jr.: Hospital or hospitality?

Mr. Fairweather (continuing): Hospitality. You know, I never like that expression. When they talk about keys and presenting keys for this and that, it signifies to me that something is kept under lock and key. I will admit that there are certain parties (I am not looking at you, governor) that might have things under lock and key in Des Moines, but I want to say to you that the hospitality of the city of Des Moines is not kept under lock and key and you will need neither key nor key-ring, for our hospitality is the same brand of hospitality that you left at home, the genuine old Iowa brand, and that is 'nuf sed.

Now, friends, it has been said, and truly said, that of all that is good, Iowa affords the best. I believe that that is true, and I say to you tonight, my friends, who are seated here, that the state of Iowa owes to you men and the efforts of you men a debt of gratitude that it will be hard to pay, because as Iowa affords the best, it is thru the efforts of you men that that best is accumulated at your county fairs and at the great Iowa state fair.

Speaking of fairs, my friends, you know that if there is one thing that should make the Iowa farmer proud of his business and his occupation, if there is one thing that should make the Iowa stock-breeder proud of his position and his occupation, it is the wonderful exhibits he sees as he walks thru the county and state fairs. I want to say this to you, that I never go out to this state fair and see the wonderful productivity of the state, but I feel on leaving that I am prouder that I am an Iowan than I was before I went in, because when I see the wonders that the soil has produced, when I see the wonders that the stockmen have produced, I say that any man should say, and say it proudly, that he is proud to be a citizen of a state that can do those things.

Now, my friends, since you last met around these banquet boards, we have witnessed a wonderful war, and we have come to the end of it. I will never forget the last day of the state fair (of which, thru the courtesy of the fair management, I was one of the timers), after the last race was run, I looked over that crowd, that magnificent crowd of loyal Americans, and said to myself, "Well, goodbye old fair, we won't have any more until this war is over". But I know you are pleased tonight, my friends, to know that thru the efforts of the boys in khaki and the prayers and the wishes and the hopes of the people at home, that on the opening of the next state fair and your next county fair, you will not have the propositions to meet that you had to meet this year, for under the dome of the skies of heaven we will have our fairs under peace conditions and apart from the things that have worried you in the past year or two. I want to say this to you, if any one went out to this Iowa state fair and sat there in that magnificent amphitheatre, and the only thing that you saw or heard was the band striking up the "Star Spangled Banner" and the display of that great service banner with its 86,000 and more stars representing the Iowa boys in the service of their country, I say that that alone paid for all of your trouble in coming and for all the expense that you were put to, because you went away feeling a lot prouder that you are an American citizen.

Now, my friends, I say that you are welcome in Des Moines. I know that the officials here will take good care of you, and I see a double-barreled contingent here from the Chamber of Commerce who will look after you and all your interests, Mr. Faxon and Mr. Hamilton, as well as the Glee Club—Faxon will steer you out, Hamilton will bail you out, and the Glee Club will sing you out—and I only hope that we will see you again next year, so I will bid you goodnight, and I thank you.

The Toastmaster: The program announces a response by J. C. Beckner, but as he was unavoidably detained at home, I am going to call on Mr. C. E. Cameron for a response at this time.

C. E. Cameron: Mr. Toastmaster, Governor, and Gentlemen of the Association of Fairs of Iowa:

I think this is showing a little partiality, for here is Tom Fairweather of the eleventh district, here is Governor Harding of the eleventh district, and here is myself of the eleventh district. The eleventh district must be all right.

I know from experience what Tom Fairweather thinks about fairs, for Tom always was interested in fairs, and he has brought his interest down here to Des Moines. I want to say to you that so far as Des Moines is concerned, in connection with the fairs and especially the Iowa state fair, we are in happy accord with not only Tom Fairweather, Mr. Faxon and Mr. Hamilton, but with every citizen of Des Moines, for they are all intensely interested in the state fair of Iowa. It is you gentlemen representing the county fairs of the state of Iowa, as I said this afternoon, who are the feeders of this great fair of Iowa. If it weren't for the county fairs that first started the exhibits coming in, we would not today be on the map as the greatest state fair in the United States, and we are recognized as such, as the greatest agricultural fair in the country.

I haven't much to say,—this has taken me by surprise and I don't know anything further to say, except that I accept the welcome in behalf of the Iowa Association of County and District Fair Managers that the mayor has offered to us.

The Toastmaster: Gentlemen, we have with us tonight the man who didn't invent the American language, Teddy Roosevelt beat him to it, but he does know how to use the American language and he does know how to compel some who are not good Americans how to use it. He is not a fellow that I have always agreed with politically, but it was a good democratic vote that I gave him this fall because he was loyal to that language. I take pleasure in introducing to you Gov. W. L. Harding—if he needs introducing.

Hon. W. L. Harding: Mr. Chairman and Gentlemen of the Convention:

Whenever I meet the manager of a fair, I would like to call you "professor" for, in my judgment, the county fair, the district fair and the state fair are educational institutions and should be so recognized. I know something of the difficulties you have had in the past two years in your work in putting on the fairs thruout the state, it has not been an easy task, but I admire your courage and stick-to-it-iveness, that you didn't give up, for it would not have been propper to have not had the fairs during the war-time,—we needed the inspiration and the education which they furnished, and we needed the entertainment for the people. So you are to be congratulated that you had the courage to keep on.

Now, I am not going to take very much of your time. One of the best, if not the best, orators in Iowa is here on the program just before the "Free Attractions", so I know none of you will leave. I have had the experience of being placed last on the program and then have some local politician occupy the entire evening, and I don't intend to do that.

I have a few figures that I would like to leave with you tonight about Iowa. Primarily you are dealing with the farm. The tendency is, for those who live in town and city, to think that they are not vitally interested in the farm. The success of Iowa depends absolutely upon the success of the farmer. The city of Des Moines could not live were it not for successful farmers surrounding it. I haven't any sympathy for that class of men who are trying to organize the farmer as a class against the other classes,—he is making a mistake. Any political party that is organized on class lines is bound to fail, and it ought to fail. But we are all interested in the farm, whether we are primarily engaged in that occupation or not. As the farmers of this country are successful, the manufacturers and the commercial interests of the country will be successful. I was interested in finding out what was done during the year 1917-18 by the farmers of Iowa. You will recall that a little better than fifty-thousand boys went from the farms of Iowa into the service of their country. There are 217,000 farms in Iowa; there is one man for about seventy acres of land that is tilled in Iowa. Keeping that thought in mind, that the number of men on the farms was reduced better than 50,-000, I want you to listen to the figures:

The total average yield production of corn, oats, wheat, barley and rye for the year 1917-18 was 666,482,500 bushels; the total average yield production of the same grains for the ten-year period immediately preceding the war was 522,882,300 bushels, or 144,000,000 bushels more during the period of the war per year than before. That is an increase of twenty-seven per cent in farm produce in the state of Iowa during the period of the year. I challenge any state in the union to do half as well in increase in production as we did here in Iowa. An increase of almost one million hogs, and an increase of 165,000 head of cattle.

Now, I give you these figures for the purpose of emphasizing the one point I want to make, that I don't need to make with you, but ought to be made with the people of Iowa, and that is that it is organization that accomplishes that wonderful result. It is organization! If we hadn't had the county and the state fairs; if we hadn't had the farm bureaus; if we hadn't had our extension department; if we hadn't had our agricultural college and the other allied agencies along that line, we would have fallen down on our production rather than making an increase.

The increase in production during the war period as compared with the ordinary peace times has brought money enough into the state of Iowa to keep these activities in the state of Iowa for the next fifty years. With man-power trained and equipped, as it can be, and the minds of the people in peace times riveted to the question of production, as it has been in war times, there is no end to what we can do in Iowa, and I want to pledge you that in this work we are doing, it is educational, it is beneficial, and it results in dollars and cents in the pockets of the people of the state and the nation, and I congratulate you on the work you are doing.

Now, I am not going to take more of your time. There are a lot of subjects I would like to talk about. I would like to talk about a policy for Iowa along an agricultural line. We have been thinking about increasing the production; we have been thinking about giving the producer a fair, honest market in which to sell his goods. If I had my way about it, I would absolutely prohibit gambling in any food stuffs of any kind or character. In the first political fight I ever made, it was against the gamblers, and I am still against them. The gambler hasn't any place in human society. He produces nothing; he does no good; he has no place. I would have a system of reports—twice a year, at least—coming from the school district—say, on the 15th day of June, a report showing the actual number of acres of every kind of cereal that is planted; then at another date, some time in November or December, the actual number of acres grown. In the course of three or four years you would have a fund of information, and the farmer could sell at an honest-to-God market; and then some information that could be easily furnished, about the best place to sell and the best time to sell, and all of that. We could accomplish a great deal for the man who makes the real wealth, and greatly stabilize one of the principal industries of the world. But I am not going into that. It is always a pleasure to meet with all of the secretaries of the fairs together, and it is always a pleasure to meet with you in your own home community when the fair is on. I didn't have to visit with you very much then—in fact, you wouldn't let a fellow visit with you very long. I didn't show at so many fairs last year as I did two years ago. I had a good many invitations, but I wasn't able to make them. Some of the best meetings I had on the various phases of the war were at the county and district fairs. It is a wonderful place for a man when he is running for office to present his cause, or, at least, to give the people a chance to look at him, and that is what a candidate does, and it is a wonderful place if you have a message about the war. Keep on with the county fair! I am a firm believer in de-centralization. I believe in keeping up the interest in the local community. I would rather see an ordinary bull at a county fair than to see the best bull in the world at a national fair. It is better for the bull and it is better for the people. It is all right to have the graduated fair, but you cannot get away from the fact that you have got to have the common school, you have got to have the local fair where you reach all of the people, and I sometimes think that the big institutions like the livestock show that they have down at Chicago really doesn't do the good that the fairs do out where you get to the every-day folks, so keep up the county fair, and if you keep up the county fair I am dead sure that you cannot keep the state fair down. But if we had to choose between the two I would take the county fair, but in Iowa we don't have to choose, we have them both.

I don't know whether you need any legislation, or not. I suppose you would like to have the money increased a little, if you could, and I don't know enough about that to discuss it, but so far as I am concerned I am heart and soul in favor of building these institutions strong and permanent and of lending whatever financial aid is necessary in order to insure that they be a success every year—the year when the weather is good and the sun shines, or whether the weather is bad and it rains. Keep on with the work. There aren't very many souls that have the courage to be a fair manager. It is only the brave that take up this kind of a job and run the fairs. I do believe that in Iowa here we have the entertainment feature and the educational feature well balanced. I wouldn't want to go to a fair where it is all serious. I like to kick up my heels a little—the Midway isn't so bad if you don't have too much of it, but a little of the light does our people good; it helps them to get together and enjoy themselves. Keep on with this educational institution, and if you are not blessed here you will be rewarded for it in the hereafter. I thank you.

The Toastmaster: We have with us this evening as our principal speaker a gentleman who is of that profession which requires a retainer before service is rendered. I am informed, however, that he will not expect a retainer here from any of the fair men. I take pleasure in introducing to you Hon. James B. Weaver, Jr.

J. B. Weaver: Mr. Toastmaster and Gentlemen of the Convention: I am sure that it is safer to speak to a company of fair men when you have them in a room like this than when out in a grandstand. I have had the latter experience a good many times, but never quite that which was visited upon a friend of mine—I think it is Charley Picket on whom they tell this story. Charley and Dolliver were on the program at one of the county fairs, and were to address the crowd in the grandstand. The crowd paid pretty good attention to him at first—for he is a splendid speaker—but pretty soon one of the exhibitors brought a magnificent stallion out into the ring and walked him up and down in full display before the grandstand, and of course people began to look at that stallion. Charley noticed their lack of attention and tried to get hold of them again, and he would succeed for a time, and then again their eyes would wander toward the ring where this handsome animal was being exhibited. This continued for some time, and, finding it impossible to get an attentive hearing, he finished in disgust, and Dolliver came on. By the way, they had just taken the stallion off as Dolliver began to speak, and he had no difficulty holding their attention. In referring to the preceding address, Dolliver said "My young friend Picket did pretty well, considering the competition he had."

As I think of your Association, what it means to the state of Iowa, to the nation, as you are gathering the people of Iowa into these Autumn meetings, there to compare the results of their efforts, to compare the magnificent products of the state of Iowa, to stimulate each other into better production, better livestock, better grain, and better activities for the development of our state, I realize that there are few agencies that are greater in their influence upon the life of the state than yours; and I feel this, too, that the county fair has come to be the occasion not only of the display of products of Iowa but where Iowans meet and where there is developed a school of patriotic interest in the nation and in the state.

I see Frank Young here tonight. Frank comes from my old county down in the southern part of the state, reminding me of my boyhood, back a good deal farther than I like to admit, when the holding of the fair in the fall was only equal in interest by one other event, and that was the coming of Van Amberg's circus, which used to come across the clay hills from Ottumwa. As boys we always laid our plans for those two events—the county fair and the circus. We were preparing for it in July and August, and we thought of the times we would have, where we would all meet at the fair and see the stock and the races and hear the bands (it was great!) and I remember one thing more, and if he is still living he is still there, for they couldn't run it without a certain man on a great prancing charger, with a broad scarlet sash about his waist, with a great flowing beard, and I remember so well how he would sit up erect and hold those lines, and with a graceful turn he would swing along in front of the grandstand. He was the greatest man in the world to me—as a boy! A few years ago I went out on one occasion to the state fair. The fair had changed. You had great modern buildings, and in your stock pavilion, where with one of my friends I went inside on the tanbark, who should I see up in the center of the pavilion but the same horseman, the same man, with the same flowing side whiskers and the great red sash across his body—there reigned T. D. Doke still in his official capacity.

Those early days of my boyhood are the days I want in part to talk to you of tonight. Those were the days when I was something of a farmer, too, and I was getting ready in my farming, always, for that week off during the fair. My farming in those early days, in connection with which I remember the county fair, was only done on a three-acre patch, and of the three acres we had two acres in hay—full of trees, too, it was —blue-grass soil; and so it was my duty to get the hay in the mow in season to provide feed for the horse and cow during the cold winter months. But the hay had to be mowed before it could be put away, so I came to know Londonderry Diggs, an old colored man, and he came with that scythe of his, with an edge as sharp as a razor. Old Lon would never take his feet off the ground as he swung his scythe through the hay, and when he got through the stubble would be as smooth as though cut by a lawn mower. We were getting things all ready for winter. We would have to get the hay in the mow, and in order to do that we would call on Father Marr. He was the drayman of the town. He had two horses, both blind in both eyes, and he was blind in one eye—there was just one eye to the outfit. He couldn't see where he was going and would bump into a tree or a stump every twenty feet. Those were the great old days! It made an impression on me, and made a lasting impression.

I was coming downtown in my automobile here in the streets of Des Moines, coming down Grand avenue, not long ago, and my auto skidded and bumped into a load of hay. One whiff of that fragrant hay and I wasn't in Des Moines at all, I was with old Lon Diggs and Father Marr down in Davis county. I was so full of it that when I got to the office I sat down and wrote it out, and here it is:

A LOAD OF HAY.

Hard-paved streets and hurrying feet,
Where it's oft but a nod though old friends meet,
Rattle of cart and shriek of horn,
Laughing Young and Age forlorn,
Bound for the office I speed away,
When my auto brushes—a load of hay!

Chauffeur curses, I scarcely hear,
For things I loved as a boy seem near—
Scent of meadows at early morn,
Miles of waving fields of corn,
Lowing cattle and colts at play—
Far have I drifted another way!

Hark, the bell as it calls the noon!
Boys at their chores, hear them whistle a tune?
Barn doors creaking on rusty locks,
Rattle of corn in the old feed box,
Answering nicker of toss of hay—
Old, sweet sounds of a far-off day.

There, my driver stops with a jerk,
Then far aloft to the scene of my work;
But all day long 'midst the city's roar
My heart is the heart of a boy once more,
My feet in old-time fields astray,
Lured—by the scent from a load of hay!

Which reminds me, by the way, when I see one of those Iowa boys who, rather than stay in the place where he belongs, wants to get into town and work in a garage or hotel, or even in a drug store—I guess my friend Cameron isn't in that business any more—I say to myself, "Lord, if I swear a little, write me innocent, having such good cause."

Rupert Hughes, who was raised at Keokuk, is one of the great story tellers of the country, and he has written about "The Happiest Man in I-o-way." He writes of a boy who had never gone to a consolidated school, and his grammar was a little off, but his heart in the right place. He was talking to his best girl, and remember, this was in the old days long before the automobile. Here is his poem:

Jes' down the road a piece, 'ith the dust so deep
  It teched the bay mare's fetlocks; an' the sun
So b'ilin' hot, the peewees dassn't peep,
  Seemed like midsummer 'fore the spring's begun!
An' me plumb beat an' good-fer-nothin'-like
  An' awful lonedsome fer a sight o' you
I come to that big locus' by the pike,
  An' she was all in bloom, an' trembly, too,
With breezes like drug-store perfumery.
  I stood in my stirrups, with my head
So deep in flowers they almost smothered me.
  I kind o' liked to think that I was dead . . .
An' if I hed 'a' died like that today,
  I'd 'a' be'n the happiest man in I-o-way.

For whut's the us't o' goin' on like this?
  Your pa not 'lowin' me around the place . . .

Well, fust I knowed, I'd give them blooms a kiss;
They tasted like Good-Night on your white face.
I reached my arms out wide, an' hugged 'em—say,
I dreamp' your little heart was hammerin' me!
I broke this branch off for a love-bo'quet;
'F I'd be'n a giant, I'd 'a' plucked the tree!
The blooms is kind o' dusty from the road,
But you won't mind. And, as the feller said,
"When this you see remember me"—I knowed
Another poem; but I've lost my head
From seein' you! 'Bout all that I kin say
Is—"I'm the happiest man in I-o-way."

Well, comin' 'long the road I seen your ma
Drive by to town—she didn't speak to me!
An' in the farthest field I seen your pa
At his spring-plowin', like I'd ought to be.
But, knowin' you'd be here all by yourself,
I hed to come—for now's our livin' chance.
Take off yer apern, leave things on the shelf—
Our preacher needs what th' feller calls "romance."
Ain't got no red-wheeled buggy; but the mare
Will carry double, like we've trained her to.
Jes' put a locus' blossom in your hair
An' let's ride straight to heaven—me an' you!
I'll build y' a little house, an' folks 'll say:
"There lives the happiest pair in I-o-way."

You have given me a topic tonight that I would like to spend a month on before I made you a speech, "The Spirit of America." Oh, gentlemen, what does the spirit of America mean today and tonight in the life of the world? We lit our torch 140 years ago, held it aloft, and the oppressed of the world have seen it. In all that time they have seen it, and it has been the thing that has kept alive the hopes of the oppressed peoples throughout the world, a desire for the freedom that is now coming to them. I tell you, this spirit of America started something in the world, and now having started it, and having come out from oppression, millions upon millions of our brothers are face to face with chaos and are looking to us to be a great steadying influence in the life of the world to see that this experiment which we started, which we more than any other nation thrust upon the world, is made a success among those in whom we have raised this ambition. I want it to be said in the history of the world—I want it to be said in this great era of chaos, when down-trodden peoples are being raised into self-government, I want the historians of the world to write, after I am gone, that the three nations which held the world steady were France, England and the United States, the great self-governing nations. And when you think of the spirit of America, you wonder what it is. If there is anything that you can say concerning it, that would crystallize that spirit, I think it is this: It was daring, what we Americans call "initiative;"

and it is an interesting thing to me that this nation, this continent, had its birth out of a spirit of initiative which was at that time absolutely unparalleled in the life of the world. Let me go back just a moment to Italy. What do we owe to Italy? Here was Marco Polo, the young Italian who worked his way, when about seventeen years of age, to the country of Kublai Khan, the great Mongol. He stayed there several years and then worked his way back to Italy. There he wrote his travels, and those travels got into the hands of Christopher Columbus, another Italian. Christopher Columbus came to believe that the world was round. At the western entrance of the Mediterranean there stands on one side magnificent Gibraltar, and on the other side the great promontory of Africa. They are called the "Pillars of Hercules." Legend has it that at one time these mountains separated the Mediterranean from the Atlantic, and that Hercules tore them apart. Up to the time that Columbus made his great voyage, it is true that boats had slipped out and run up and down the coast, but there was the great ocean stretching to the west upon which no man had dared try his skill or risk his safety. Columbus, believing that the world was round, sought to go around it, and finally he said, "I will steal out through the Pillars of Hercules, and I will sail and sail into the golden west"—in the hope that he could find a way to India. India had been reached by vessels prior to that time from the South by closely hugging the coast, but Columbus hoped to discover a more direct route, and so with the cross of Christ upon his breast he sailed away in search of the great Khan that Marco Polo had reached, and when he discovered the islands upon the American coast he called them "Marco Polo Islands." This shows that Columbus gives to Marco Polo the credit for helping to inspire him to make that great venture upon the unknown seas.

Joaquin Miller, in a wonderful poem, has voiced the sentiment of Columbus, the spirit of daring and initiative in exploring new fields, which is the spirit of America, the spirit of "Sail on and on." Miller says:

Behind him lay the gray Azores,
  Behind the Gates of Hercules;
Before him not the ghost of shores;
  Before him only shoreless seas.
The good mate said: "Now must we pray,
  For lo! the very stars are gone.
Brave Adm'r'l, speak; what shall I say?"
  "Why, say: 'Sail on! sail on! and on!'"

"My men grow mutinous day by day;
  My men grow ghastly wan and weak."
The stout mate thought of home; a spray
  Of salt wave washed his swarthy cheek.
"What shall I say, brave Adm'r'l, say,
  If we sight naught but seas at dawn?"
"Why, you shall say at break of day:
  'Sail on! sail on! sail on! and on!'"

They sailed and sailed, as winds might blow,
Until at last the blanched mate said:
'Why, now not even God would know
Should I and all my men fall dead.
These very winds forget their way,
For God from these dread seas is gone.
Now speak, brave Adm'r'l; speak and say—"
He said, "Sail on! sail on! and on!"

They sailed. They sailed. Then spake the mate:
"This mad sea shows his teeth tonight.
He curls his lip, he lies in wait,
With lifted teeth, as if to bite!
Brave Adm'r'l, say but one good word:
What shall we do when hope is gone?"
The words leapt like a leaping sword:
"Sail on! sail on! sail on! and on!"

Then, pale and worn, he kept his deck,
And peered through darkness. Ah, that night
Of all dark nights! And then a speck—
A light! A light! A light! A light!
It grew, a starlit flag unfurled!
It grew to be Time's burst of dawn.
He gained a world; he gave that world
Its grandest lesson: "On! Sail on!"

That is the spirit of Columbus, and the men of this great continent have taken on that spirit of initiative and daring, willingness to enter new fields, willingness to try new plans, willingness to enter upon great ventures. Vision has been the thing that has marked the men of this nation. You may take the Puritans of 1620. They did not try to hold New England to themselves. They did not try to hold it for themselves or their own people only. They welcomed the Danes, the Dutch, the French, the Germans, the Swedes. They were then willing to try the germ of the new nation; they were willing to try it with a half dozen or more races in their midst. That was a daring thing. Then they came on to our great Revolution, when they dared to stand up in the face of history and announce the revolutionary doctrine that all men are created equal, and that government gets its right to govern from the consent of the governed. That was the daring principle that they launched in the world, which has gone on and on, with its leavening influence until the Central Empires, the greatest military autocracies in the history of the world, and the smaller monarchical nations about them have given up and the victory of democracy now resounds in the corridors of the world.

That doctrine has come to stay, and whether or not this is the peak of an era and the world is henceforth going down into chaos, whether that is true or not, is the problem of the democratic peoples of the world —to provide for the safety of the world. And how shall we do it? There is one great way, and the only way. It is the point that the governor hinted at tonight when he said that we must have national interest in

America for every class, not class interest or separate class action. We can never make a great success of this democratic experiment unless each class will undertake its interdependence upon the other class—the farmer, the laborer, the city man, the mechanic, the agriculturalist, all interdependent and all marching on to a great destiny in the life of the world.

I remember another daring thing that this country did. In 1803 Napoleon was engaged in a great war with England, and we sent commissioners over to France to do what? To acquire the mouths of the Mississippi river; to acquire a limited section of the Louisiana territory. Livingstone and Monroe were the commissioners, and when they got over there Napoleon gave them an opportunity, against their instructions, to acquire how much land? Louisiana, Arkansas, Missouri, Iowa, Minnesota, North and South Dakota, the greater part of Kansas, Nebraska, part of Oklahoma, the greater part of Colorado, nearly all of Montana, and a large part of Idaho—one million square miles, at 2½ cents per acre—$15,000,000. Fifteen million dollars is less than the valuation of almost every county represented here tonight. What did those two commissioners do? Here were those two men clear across the ocean—in those days we were without cablegrams, remember—and what did they do? They saw the opportunity to secure one-million square miles for $15,000,000, and they took it. And what did Jefferson do at that time—the strict constructionist who believed that the federal government had only certain expressed rights and that all the rest of the rights were in the states—he said, "We will shut up the constitution and accept the purchase of one million square miles for $15,000,000." Now men who had not lived the unfettered, free life of America never would have taken that sort of chance. It is to the eternal credit of Livingstone and Monroe, and to the credit of Jefferson, that that great purchase was consummated out here in the Mississippi Valley, this soil upon which we sit tonight. That was another evidence of the initiative and daring of the American spirit.

I will come on very rapidly, up into the era of the Civil War. Here were two great sections of America, both of them determined, both of them free, both of them having this same American spirit. One of them said, "We have this great institution of slavery in the South, and we do not propose to give it up even if it severs the Union." But there was in this country at that time a wonderful man who carried this country thru the fires of that conflict, and that great man said, in effect: "If I can save the Union with slavery, I will save it; if I can save the Union without slavery, I will save it; the question of slavery is not my end; my end now is the saving of the Union, and to this end we dedicate all the manpower and the moral power and the wealth of this great Northland." There were two groups of men, equally daring in spirit, back of one a great righteous principle, men who believed in perpetuating this experiment on American soil, and the man who is armed with justice, tho he might be met by another equally powerful, will be victorious, as has been shown in that war. Justice is the spirit of God working in the affairs of mankind. As so we proved that our country was strong enough to protect not only the liberties of its people, but to preserve its own integrity.

Now we come to my age, the age in which I was born. I was born just between two great periods. My youth was amidst the echoes of the Civil War; and in my middle age I have heard the reverberations of this mightiest conflict. I belong to this middle generation, that generation born since the civil war and yet too old to take a fighting part in the world war. Following the close of the Civil War there were here in the North the free men who had cemented the unity of America, and there was a continent to be exploited. Thirty-five million acres in Iowa, with very little of it farmed at that time—wonderful, fertile Iowa, almost primeval lands, and so the soldiers came out of the armies to spread over the prairie. That was the significant event that followed the Civil War period.

Then came the scientific era. Think what has happened in my lifetime! In 1869 the first transcontinental railway wended its way from coast to coast; in 1871, I believe it was, the first ocean cable was laid, bringing the news of the world to the breakfast table; in 1875, thru the genius of an Edison, humanity emerged from the gloom of the candle and touching a button this unseen energy illuminated your home from cellar to garret and stood poised the instant servant of humanity. In 1877 came Holland's submarine, the puny but unquestioned parent of the wonderful U-boat, with a cruising radius of ten thousand miles. That was in '77. And then followed the internal combustion engine, with its tremendous possibilities. It made possible the automobile, and taught humanity to hitch its wagon to a star, to launch it in the path of the storm. Then came Marconi and his wireless, and the cries of those in peril on the deep could be heard across the expanse of the seas. And then came the dreadnaughts, frowning citadels of Mars, grim floating fortresses, built to express the will of a nation in the thunder of their mighty guns. Again, take as an illustration the power-plant at Keokuk, where they have gathered and harnessed for the use of humanity the power of 250,000 horses, the thunder of their hoofs transformed into the crash and roar of giant turbine engines, their silken sides become the thousand glistening shafts, their neigh changed to singing the song of contented industry. Walk up the canyon of Broadway in New York City and see those sky-scrapers! To me they are not just stone and metal, they are an expression and symbol of the spirit of America, searching into the skies for an expression of its will. This is the great thing that has come about—the scientific era, and with it have come the captains of industry, men who but yesterday were workmen, and today are leaders of giant forces and personality.

There came the development of our railways, until we have today 300,000 miles of these steel ribbons serving the needs of the people. I tell you, gentlemen, the spirit of America was expressed in these things, and we took great pride in them, but we became intoxicated with seeing the wheels go round, and that intoxication was eating into the heart of our people. Now, why do I say that? For this reason, that when the war began in 1914, we were willing to see the invasion of Belgium going on over there without a protest; we were willing, most of us, to answer Yes to the statement that we had no interest in the sources of that great conflict; we said we were "too proud to fight". The nation as a whole responded to that sentiment, but I thank God that the time came when, as Kipling said of us, "Till dazed by many doubts he lifts the drumming guns that have no doubts." I thank God that the time came when the spirit of the American men and women arose, and when "the jingle of the guinea" was drowned in the singing, tramping millions of American youth bound for the other side. Let us remember this! We had easy living—no such living in all the world as existed for America for twenty-five years before the beginning of this war. We had gone mad with the speed of living, the ease of living, the rapidity with which we amassed wealth. We were willing for the first two years of the war to listen to the jingle of golden sovereigns into the coffers of America, and it took us all that time to awake. Now we see it! "Till dazed by many doubts, he lifts the drumming guns that have no doubts." When we did see it, what did you see? You finally saw a nation with the blood of all the world in its veins, a nation of one-hundred-five or one-hundred-ten million people, a great cosmopolitan nation, turning its eyes to the other side, facing the great conflagration and laying upon the altar of the world's need our moral power, our wealth and our fighting men. And, oh, how ashamed we would have been if, when the history of this world war were written, it should have been said that we did not have a real share in it. We have had a real share in it, but not in our losses. Of course, our losses cannot compare with the losses of the others. I don't know what your race is, but there is in the veins of this audience the blood of probably a half dozen races. You men who are stockmen know this, that if you keep inbreeding you get nowhere, your stock loses its virility. It is the crossing of the breeds that gives your stock its strength, and of men it is as true as it is of any phase of animal life. When the stock runs down, bring in a new, verile stock, and so in America they have come to us from all over the world.

But I want to speak of England. If you have any differences of opinion in thinking of England, put that out of your hearts, for England, that "tight little isle", when the war came on,—what did England do? In every harbor the length and breadth of England could be heard the rumble as she hauled up her anchor chains, and sent her "contemptible little army" across the channel to help turn the dagger pointed at the heart of France. But what else did she do? She carried twenty million of her soldiers from the ends of the earth to and from the battle fields of Europe; she carried 50,000,000 tons of oil and fuel, and 130,000,000 tons of supplies. She swept the seas of the earth free of enemy craft. Think of it, forty-eight per cent of our American boys were carried to the other side on British vessels. She financed the Allies with her own billions before we got in, and she fought upon seventeen battle fronts, and when the war was won she left in the blasted soil of Europe a million of her sons. In the reunions that will be held all over the world after this great conflict we will never again hear the tramp, tramp, tramp of the feet of those million Tommies who went forth to give the last measure of devotion, but they will be remembered forever in the hearts of a grateful world. Thank God for old Britain! And remember those boys!

What did Chatham say? The elder Pitt, in the time of the American revolution, when British soldiers were attempting to put down the rebellion on this side, that great statesman stood up in the Parliament of England and, with the great working class of Great Britain back of him, he said: "If I were an American as I am an Englishman, so long as there were a foreign troop landed upon my soil, I would never lay down my arms, never! never!! never!!!" That was said in the Parliament of England by a great Englishman, and he had the sympathy of the British workman back of him. Every American child should know him.

What of France? Wonderful France, with only one-third of our population! France was making only 30,000 shells per day when the war began, but she increased production until at the close of the war she was turning out 300,000 every day. Remember, it was France that stood at Verdun and gave between three and four hundred thousand of her sons, fighting under a banner upon which was inscribed, "They shall not pass!" That is the spirit of France. And of France we must say as Hugo said: "Every man has two countries—his own and France." That is the way the world feels concerning the wonderful spirit of that great people.

And there was Italy! What has Italy done? Italy held one and one-half million Austrians on her front when they were sorely needed by the Central Powers on the other fronts.

And then Belgium—brave, ravished Belgium! Belgium fighting to the last man, with her territory overrun by the Hun except a strip of Flanders as big as a man's hand. Oh, the undying devotion of Belgium! And within a few days the King and Queen of Belgium have marched back into Brussels—their own Brussels of old! Yes, and we went over and fought, but, my friends, how close we came to not being there in time!

Germany said, when the Russian collapse took place, "We will withdraw our soldiers from the Eastern front and hurl them into France before the Americans arrive." And in your heart, and in mine, during those dark days, you went down early in the morning to get the paper, didn't you? You were almost afraid to see it. There was a deep sinking feeling in our hearts, that they might be successful. And at that time we had a few, just a few thousand soldiers over there, when they first started to bring their soldiers to the Western front. When they got them over and began that great drive, what did they want to do? Drive down the valley of the Somme, out off the British and force them into the sea; take Paris; take France, Italy, and isolate England, before we could get over a respectable force, so we couldn't land a force upon the soil of Europe. They began first down in Picardy. In three days they had gone thirty miles. The thunder of the guns was heard by every Parisian, and then the drive slowed up and was held at Amiens. Then they started again and were stopped just short of Arras; then they began to drive in toward Calais, and they drove on and on until Haig said, "You must not give another inch; you must die where you stand", and they died! Yes, Britain stood there for the world's civilization and for the American people, too. Then they drove in and past Montdidier, and again the lines stood firm. And then the Hun said, "We have them all engaged, and we will drive down by the Marne with our reserves." It was at Chalons sur Marne that Attila the Hun was defeated way back in the old days. It was at the Marne that Napoleon met his defeat. It was at the Marne in '71 during the Franco-Prussian war that the Germans won. And so they began to drive down and across the Marne, and—then something happened! Pershing said this, he said: "We want to be in this fight; take our men, use them anywhere; that is what we are here for; brigade them with your men," and then Foch took those marines, those sterling American soldiers of the sea, and straight into the brazen face of the enemy, flushed with victory, he threw like a thunderbolt the might and power of free American manhood. It was the spirit of America that inspired those boys to do it. Then the great retreat of the enemy began. But that was just the beginning. St. Mihiel salient had stood there for four years, a menace to Paris, a menace to the western front. For four years it had stood there, and our boys were told to take it. They said to themselves in spirit, not in words, "We will match the poilu at Verdun with his 'They shall not pass' with another sentence, 'It shall not stand' ". And they looked at St. Mihiel and that morning when they started they said, "It shall not stand!", and in twenty-four hours they had wiped out the St. Mihiel salient and started the drive northward which eventually put the American soldier at Sedan, potentially threatening the lines of communication of the German armies on the entire western front. And every history that is written for the next thousand years will record that this great ambition of the Central Powers which threatened to dominate the world and make this a world in which the common man would do only the thing that he was told to do, that that thing reached its peak at a certain time on the western front, and that what tipped the scales and sent the Hun back, never to recover, was the brave boys, the free sons of this America, singing under the stars and stripes.

Now let me tell you two or three historical incidents that are of interest to me. Of this great dial of history, they say that the "Mills of the gods grind slowly, but they grind exceedingly small". Back in 1776, when American soldiers were wintering at Valley Forge, Kosciuszko, a young Polish nobleman, came over here and offered his services to Washington, with whom he fought at Yorktown, and served our nation splendidly. He went back to Poland and there found his country engaged with Russia, Prussia and Austria, in a war against dismemberment. Poland was defeated and he taken captive. When he was released from prison he was offered his sword, but he refused it, saying: "I have no need of a sword, as I have no country", and he went off to France and died there in exile. This man that helped us to win our freedom never lived to see us repay Poland for his gift to us, but the other day our American president announced as one of his fourteen points that something should come into being—what is it? A reunion of Poland, with thirty-million of souls, and so I cannot but think that we are repaying by that act what was done for us, for you and me, by Kosciuszko at the time this nation was born.

Then there was another, von Steuben, who served on the staff of Frederick the Great. While von Steuben was on a visit to Paris in 1777 he was asked by the French to go to America to train the colonial soldiers at Valley Forge under Washington. He said he could not, but they induced him to come, and he arrived at Portsmouth, New Hampshire, and offered his services to the Congress and to General Washington, which were joyfully accepted. He joined the army at Valley Forge, was appointed inspector-general, prepared a manual of tactics for the army, remodeled its organization, organized an efficient staff, and improved its discipline.

With von Steuben came another young man, a French lieutenant, who stated when he left his native land for America that he would kiss the first American woman that he saw on this side of the water. When he came off the boat he saw there a beautiful American girl, and he said, "Miss, I am come to serve under the American flag, and I have made a vow that I shall ask the first American girl to kiss me", and to her eternal credit it may be said that she yielded.

But old von Steuben came over and after looking over the American soldiers he saw that there was good timber in them, so he taught them how to stand, how to turn, how to advance, how to retreat, how to care for themselves, and he fought with the American soldiers at Yorktown, and Congress gave him a sword in recognition of his services. And old von Steuben rests tonight at Steubenville, New York. Tonight von Steuben's country is advancing on her way to self-government; and so I think that old von Steuben would have turned over in his grave could he have beheld what his country is doing today—banishing its kaiser and feeling its way to a free life.

Again, Louis XIV built a palace at Versailles in 1668, putting $100,000,000 into the great palace itself, and when he was informed that the people were complaining of his wastefulness he stood in the palace and said "The state! I am the state!" There the absolutism of autocracy spoke at Versailles. But time went on and the great dial of time turned and there came around another hundred years, for in 1783 American and British statesmen met there to fix the terms of the Britishh surrender which resulted in the establishment of an independent government following the Revolutionary War. There spoke democracy at Versailles. Another hundred years went by again, and in 1871 the German was in possession of Versailles, his spiked helmet everywhere representing the spirit of the conqueror, for it was at Versailles that the German fixed the capitulation of Paris, took Alsace-Lorraine from France, and there the German Empire was proclaimed and Frederick declared kaiser, and Moltke and the little kings and kinglets declared that their "tag" had arrived when they would make a great German nation. There spoke again from Versailles the voice of autocracy.

But forty-seven years have gone by, and you and I are living in a time when another armistice meeting has been held at Versailles, and that meeting is a meeting of the representatives of a free world. The first thing the armistice provided for was the cessation of hostilities. The second thing is this, that the enemy shall vacate all invaded territory, namely, France, Belgium, Luxemberg, and Alsace-Loraine, and there in that voice spoke again, and spoke finally, I believe, the voice of democracy from Versailles.

We are now facing a democratic experiment, not only here, but all over this great world of ours. What is America's duty? To keep faith in our experiment; to keep faith in the efficacy and success of the government; to stand loyal to our ideals, and shoulder to shoulder to combat the man that raises his voice pleading the ideal of class in American life; to understand that we are all here together; to march on and on, cost us what it may, and let this crisis that is facing America be a lesson to you and to me to let little politics and little issues go by the board, and let us stand up straight before God feeling that the future of the world probably depends upon the steadiness of the American spirit, this great cosmopolitan spirit; our steadiness, our willingness to serve, our willingness to make the sacrifice that is necessary, that is demanded of us in the service of the flag. Francis Thompson speaks of this old globe of ours as a ship "riding at anchor off the orient sun". What a wonderful figure that is, and in these days she is lifting her sails for a new and far voyage. Her course is down the blazing path of the dawn of a new era, and who are the crew? You and I that come aboard from out the morning mists serve for a day, and then go over side again at the call of the evening bell, but God grant that we may serve truly and loyally under this flag, that we may have the undaunted spirit of the old Italian, Columbus, when he cried, "Sail on! Sail on! and on!" Let us be sure that this is not the peak we have reached in the life of the world and that it is going down henceforth, but that we are just beginning one of the most wonderful eras that the world has ever known. Let me close with these lines:

"Each age is a dream that is dying,
Or one that is coming to birth."

Let us make it an era coming to birth. Let us live these remaining years in our civil life so that our children and our grandchildren, and all the ages following us, will say that there was in us the same spirit as in the Revolutionary days, as in the days of the War of the Rebellion, the same that was shown by the boys who gave their lives on the "other side" in this great conflict, that we have had the will and devotion to make it a safe world for the ages to come.

"Ye who had faith to look with fearless eyes,
   Beyond the tragedy of a world of strife,
And know that out of death and night would rise
   The dawn of ampler life.
Rejoice, whatever anguish rend your heart,
   That God hath given you this priceless dower,
To live in these great times
   And do your part in Freedom's crowning hour;
That you may tell your sons, who see the light
   High in the Heavens, their heritage to take,
'I saw the powers of darkness put to flight,
   I saw the morning break.'"

The Toastmaster: I know that you all appreciate the great address that has just been given to us by Mr. Weaver. In the arrangement of our program we were assisted materially by the Chamber of Commerce, and we have with us tonight Mr. Ralph Faxon, secretary of the Des Moines Chamber of Commerce, who we would like to hear from at this time.

Ralph H. Faxon: Mr. President and Gentlemen: I don't know precisely why you should add to such a splendid program by planning other features still, as the hour grows late. It is perhaps only right and proper that everybody should have some sort of manager and without that manager something might go amiss, even at a meeting of managers, and I thought when I saw Mr. Hamilton so conspicuous here tonight that we were properly and amply represented in that capacity. Mr. Hamilton is manager of events, and as such it is, of course, consistent that he should be present with any group of managers. He has a show of his own tonight down at the Coliseum, and I think probably he has already said something about it to you today. I don't know how to add anything to this wonderful evening that we have had. I know that all of you, as I, have drunk it all in and have been considerably benefited by everything that has occurred here tonight.

Personally I came tonight because I believe in this gathering, because Mr. Lauer asked me to, because up in the Chamber we have had something to do with your convention, and because I came to see my old friend, Al Sponsler of Kansas, and I came to hear Jim Weaver, and I came to mix with you boys. It is a wonderful evening we have had, wonderful in this one respect at least, that we have taken ourselves out of the ordinary cares of our humdrum, everyday existence, and have relieved ourselves somewhat of the pleasure and the tedium of the business sessions of the association, and we have given ourselves over to a little better and a little loftier thought and the absorption of the good things of life by this great body of men gathered here together—the welcome of the mayor in his happy, pleasing way, the statistics and the meat in the governor's short, timely address, the music by the Glee Club of the Chamber of Commerce, the quartet work of these men in uniform, with a little touch in these closing days of the great conflict, and then that wonderful talk by Mr. Weaver. It seems to me that this is an evening filled with everything that is good and that it sort of balances up the consideration of our everyday program, our everyday processes, the business sessions, the planning of the fairs, the getting ready for tomorrow, and all that sort of thing, and it affects us slightly in a different sphere, for the time being, as it were, so that we can think of a few other things than the sordid and the mercenary of everyday life, and that is good for us all. And if it has been beneficial to you and the Chamber of Commerce has contributed anything to this evening, or to the two days' sessions, just let it be remembered that that is what such organizations are for, particularly in a center like this, and that it is merely a part of a better sort of life, a little more rounding-out of things in this wonderful day and generation that Mr. Weaver has pointed out, and that such evidences in times to come, in such gatherings as this, or others of a like character, will continue to be seen.

I thank you and wish you great good luck for tomorrow.

The Toastmaster: It is an ill wind that blows no man good. I don't mean, by making this remark, that the Kansas wind has blown from its confines one of its best citizens over into the boundaries of Iowa, but I do know that we have with us tonight a man who calls Kansas his home, whom we all know well, especially the fair secretaries, as the president of the American Association of Fairs and Expositions and secretary of the Kansas State Fair, Mr. A. L. Sponsler.

A. L. Sponsler: Gentlemen: I want to congratulate the fair secretaries of Iowa upon such a magnificent program as you have had here tonight. I have attended meetings of this kind for many years, but I have never attended one that seemed to me to be just as full of heart and mind and soul as this meeting. I have been literally carried away by our great oration here tonight, delivered by Mr. Weaver, through the history of ages, and it has been soul-uplifting to listen to such a magnificent address on the spirit of our country. We fair managers are taught to work more than to talk. I think in my experience and observation of fair secretaries, that the work has developed very few orators. We most of us were raised on farms and had to do with contrary mules and pokey horses and teaching calves to drink out of a bucket and those things weren't conducive to oratory. But we profess to know a good thing when we see it and when we hear it, and that is our life's work. I often wonder why we are such idealizers—because that is our business; we are engaged in a comparison of everything that touches the industry of mankind, the art of the home, the work of the loom, the product of the mines and the great manufacturing institutions of the country. I am sure that we are making magnificent progress, as the governor indicated, as Mr. Weaver depicted, and as we hear on eyery hand.

Now, the hour is growing late and I am not prepared to make any after-dinner speech, and I am not in the business of doing that anyhow, but I just want again to congratulate you on such a magnificent evening. My friend here (Faxon), who used to live in Kansas for many, many years, developed into a most successful commercial club and chamber of commerce man, and is showing the evidences of his work here since my last visit to Des Moines. I believe there are more buildings going up in Des Moines than in any city of its size in the United States, and I want to congratulate Des Moines and Iowa upon its magnificent progress, and always remember that it has men that do things.

PART IV

Live Stock Awards and Press Reports of the 1918 Iowa State Fair and Exposition.

HORSE DEPARTMENT

SUPERINTENDENT ....C. F. CURTISS, Ames.

PERCHERONS.

EXHIBITORS—Bulechek & Waters, Iowa City; Champlin Bros., Clinton; Casey Brothers, Iowa City; John Donhowe, Story City; J. O. Gring, Dallas Center; S. M. Hague, Waukee; R. W. Hoit, Beacon; Iowa State College, Ames; Frank Keenan & Son, Shenandoah; I. H. Laverty, Indianola; Lee Brothers, Mitchellville; C. P. Quirin & Sons, Marcus; J. C. Redman, Altoona; B. F. Redman, Oskaloosa; J. O. Singmaster & Son, Keota; Tom Skola, Slater; Truman's Pioneer Stud Farm, Bushnell, Illinois; Smith Brothers, Altoona; H. M. Sexaur, Ankeny.

JUDGE....................................WM. BELL, Wooster, Ohio.

Stallion Four Years or Over—First, J. O. Singmaster on Mitral, (108745), 106221; second, C. P. Quirin on Barnum II, 110366; third, Truman's Pioneer Stud Farm on Ormphre, 141963 (119537); fourth, Truman's Pioneer Stud Farm, on Orgelet, 141946 (119767); fifth, C. P. Quirin, on Bruno, 99377.

Stallion Over Three, Under Four—First, J. O. Singmaster, on Mara, 128218; second, J. O. Singmaster, on V. Tony, 124748; third, Casey Brothers, on Harker, 127498; fourth, R. W. Hoit, on Olbertan, 114794; fifth, J. O. Singmaster, on Emerson, 122978.

Stallion Over Two, Under Three—First, J. O. Singmaster, on Maple Grove Gislain, 133567; second, J. O. Singmaster, on Maple Grove Fulton, 138265; third, Bulechek and Waters, on Garret, 132502; fourth, J. O. Singmaster, on Maple Grove Laudedale, 131615; fifth, J. O. Singmaster, on Maple Grove Charles, 132540; sixth, Casey Brothers, on Nuget, 132258; seventh, Tom Skoka, on Calliaux, 131900; eighth, Smith Bros., on Altoona Hasting, 135915; ninth, J. O. Gring, on Gaylix, 135804; tenth, Bulecheck & Waters, on Griffith, 132601.

Stallion Foal—First, J. H. Laverty, on Colonel; second, Iowa State College, on Japap Excelsior; third, J. H. Laverty, on Cap.

Stallion Three Years or Over, Bred by Exhibitor—First, C. P. Quirin, on Barnum, 110366; second, J. O. Singmaster, on V. Tony, 124748; third, C. P. Quirin, on Marshall, 127810; fourth, C. P. Quirin, on Bruno, 99377.

Stallion Under Three, Bred by Exhibitor—First, J. O. Singmaster, on Maple Grove Fulton, 138265; second, J. O. Singmaster, on Maple Grove Charles, 132540.

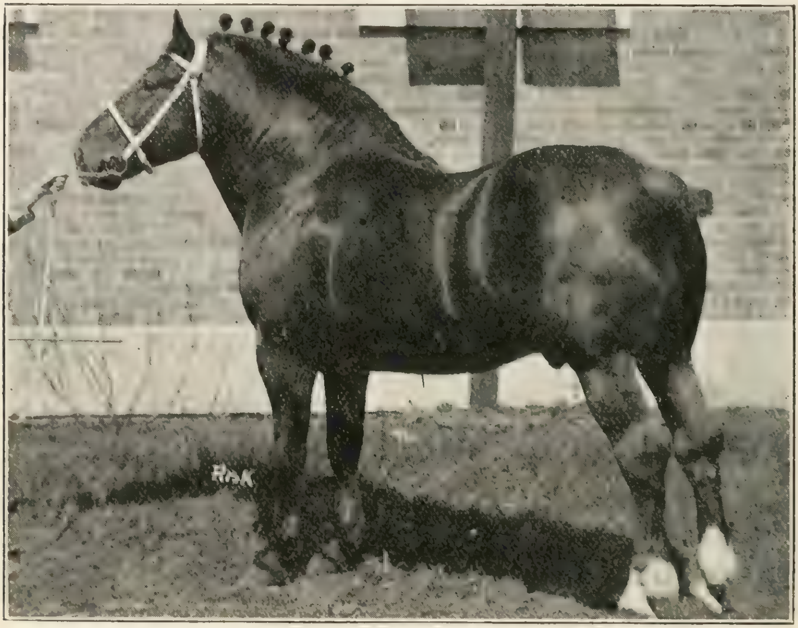
Yeld Mare Four Years or Over—First, J. O. Singmaster, on Masse, 99150 (106222); second, C. P. Quirin, on Clara, 118495; third, Frank Keenan & Sons, on Marseillaise, 106079; fourth, Lee Brothers, on Roseland, 78168.

Mare and Foal, Mare to Count 50%, Foal 50%—First, Bulechek & Waters, on Identa, 114690; second, Lee Brothers, on Roseland, 78168; third, Iowa State College, on Ellen.

Filly Over Three, Under Four—First, J. O. Singmaster, on Keota Lillie, 125128; second, J. O. Singmaster, on Keota Callie, 124070; third, Bulechek & Waters, on Ideal, 131345; fourth, Frank Keenan & Sons, on Keota Lassie, 133143.

Filly Over Two, Under Three—First, J. O. Singmaster, on Lagoceo, 129898; second, J. O. Singmaster, on Keota Kinross; third I. W. Van Nice, on Calypsoline.

Mare Foal—First, Bulechek & Waters, on Mercietta; second, Lee Brothers, on Leaside Roseland.



MITRAL

Grand Champion Percheron Stallion at the 1918 Iowa State Fair. Owned by J. O. Singmaster & Son, Keota.

Mare Three Years or Over, Bred by Exhibitor—First, J. O. Singmaster, on Keota Lillie, 125728; second, J. O. Singmaster, on Keota Callie, 24070; third, C. P. Quirin, on Clars, 118495.

Mare Under Three Years, Bred by Exhibitor—First, I. W. VanNice, on Calypsoline.

Senior Champion Stallion—J. O. Singmaster, on Mitral, (108745), 106221; Reserve, J. O. Singmaster, on Mara, 128218.

Junior Champion Stallion—J. O. Singmaster, on Rookwood Jalap, 141479; Reserve, J. O. Singmaster, on Maple Grove Gislain, 133567.

Grand Champion Stallion—J. O. Singmaster, on Mitral, (108745), 106221; Reserve, J. O. Singmaster, on Rookwood Jalap, 141479.

Senior Champion Mare—J. O. Singmaster, on Keota Lillie, 125128; Reserve, J. O. Singmaster, on Masse, (106222), 99150.

Junior Champion Mare—J. O. Singmaster, on Lagoceo, 129898; Reserve, on Patricia, 129117.

Grand Champion Mare—J. O. Singmaster, on Lagoceo, 129898; Reserve, R. W. Hoit, on Patricia, 129117.

Champion Stallion Owned in Iowa—J. O. Singmaster, on Mitral, (108745), 106221; Reserve, J. O. Singmaster, on Rookwood Jalap, 141479.

Champion Mare Owned in Iowa—J. O. Singmaster, on Lagoceo, 129898; Reserve, R. W. Hoit, on Patricia, 129117.

Get of Sire—First, J. O. Singmaster; second, J. O. Singmaster; third, Bulechek & Waters.

Produce of Mare—First, C. P. Quirin; second, Bulechek & Waters.

Grand Display—First, J. O. Singmaster; second, Bulechek & Waters.

Five Stallions Owned by Exhibitor—First, J. O. Singmaster; second, C. P. Quirin.

NATIONAL DRAFT HORSE BREEDERS' FUTURITY—PERCHERON DIVISION.

Stallions—First, J. O. Singmaster, on Rookwood Jalap, 141479; second, Champlin Brothers, on Ivan Kesaka; third, J. O. Singmaster, on Smith Creek Lagos, 138779; fourth, J. C. Redman, on Earl, 141436; fifth, Bulechek & Waters, on Henry, 141013; sixth, K. A. Wilson, on Marvel, 141935; seventh, B. F. Redman, on Mack, 136161; eighth Lee Brothers on Seaside Knight.

Fillies—First, R. W. Hoit, on Patricia, 139117; second, J. O. Singmaster, on Smith Creek Lagoretta, 138780; third, Champlin Brothers, on Edith Kesako; fourth, J. O. Singmaster, on Smith Creek Lagosessa, 138776; fifth, R. W. Hoit, on Lagitime, 136164; sixth, Lee Brothers, on Lee Side Sylvia; seventh, Bulechek & Waters, on Brilliantine H; eighth, Chas. P. Quirin, on Lady Bell, 141470; ninth, Bulechek & Waters, on Harriet, 141814; tenth, Lee Brothers, on Lee Side Golden; eleventh, R. W. Hoit, on Iowa, 136163; twelfth, Iowa State College, on Queen Marion, 139470.

SPECIAL PRIZES OFFERED BY THE PERCHERON SOCIETY OF AMERICA FOR 1918.

Stallion Three Years or Over, Bred and Owned by Exhibitor—First, C. P. Quirin, on Barnum II, 110366; second, J. O. Singmaster, on V. Tony, 124748; third, C P. Quirin, on Marshall, 127810.

Stallion Under Three, Bred and Owned by Exhibitor—First, J. O. Singmaster, on Maplegrove Fulton, 138265; second, J. O. Singmaster, on Maple Grove Charles.

Mare Three Years or Over, Bred and Owned by Exhibitor—First, J. O. Singmaster, on Keota Lillie, 125128; second, J. O. Singmaster, on Keota Callie, 124070; third, C. P. Quirin, on Clara, 118495.

Mare Under Three Years, Bred and Owned by Exhibitor—First, I. W. Van Nice, on Calypsoline.

Get of Stallion—First and second, J. O. Singmaster; third, Bulechek & Waters.

Produce of Mare—First, C. P. Quirin; second, Bulechek & Waters.

Champion Stud—First, J. O. Singmaster; second, Bulechek & Waters.

Five Stallions, Owned by Exhibitor—First, J. O. Singmaster; second, C. P. Quirin.

Champion Stallion, Open Class—J. O. Singmaster, on Mitral, (108745), 106221; Reserve, J. O. Singmaster, on Rookwood Jalap, 141479.

Champion Mare, Open Class—J. O. Singmaster, on Lagoceo, 129898; Reserve R. W. Hoit, on Patricia, 139117.

CLYDESDALE.

Exhibitors—J. F. Eness, Gilbert; H. Harris Ford, Storm Lake; J. W. Hillman, Dana; G. W. Merna, Wyoming, Illinois; South Brothers, Orion, Illinois; A. G. Soderburg, Osco, Illinois; L. C. Tice, Sully.

JUDGE........................ANDREW McFARLANE, Palo, Iowa.

Stallion Four Years or Over—First, J. W. Hillman, on Royal Knott, (17471); second, H. Harris Ford, on Prince Urbin, 18075; third, H. Harris Ford, on Prince Ulysses, 18794; fourth, H. Harris Ford, on Prince Fearless, 18112; fifth, J. W. Hillman, on White Socks, 18362.

Stallion Over Three, Under Four—First, H. Harris Ford, on Prince Fickland, 19354.

Stallion Over Two, Under Three—First, G. W. Merna, on Proud Archer, 20041; second, H. Harris Ford, on Druid; third, H. Harris Ford, on Donnellson.

Stallion Foal—First, G. W. Merna.

Stallion Three Years Old or Over, Bred by Exhibitor—First, H. Harris Ford, on Prince Urbin, 18075; second, H. Harris Ford, on Prince Fickland, 19354; third, H. Harris Ford, on Prince Ulysses, 18794; fourth, H. Harris Ford, on Prince Fearless, 18112.

Stallion Under Three, Bred by Exhibitor—First, H. Harris Ford, on Donaldson, 20042; second, G. W. Merna; third, L. C. Tice, on Sultan's Choice, 20541; fourth, H. Harris Ford, Marksman, 20774.

Yeld Mare, Four Years or Over—First, G. W. Merna, on Samuda Violet, 17936; second, H. Harris Ford, on Princess May, 16807.

Mare and Foal—First, G. W. Merna, on Molly, 17291; second, H. Harris Ford, on Baroness Alexander, (28929), 16785.

Filly Over Three, Under Four—First, J. W. Hillman, on King's Daughter, 19381; second, H. Harris Ford, on Princess Alice, 19355; third, G. W. Merna, on June 19557.

Filly Over Two, Under Three—First, L. C. Tice, on Bonita, 19895; second, J. W. Hillman, on Jessica, 19674; third, L. C. Tice, on Bethene, 19894; fourth, H. Harris Ford, on Lady Useful, 20043.

Mare Foal—First, H. Harris Ford.

Mare Three Years or Over, Bred by Exhibitor—First, G. W. Merna; second, G. W. Merna; third, H. Harris Ford, on Princess Alice, 19355; fourth, H. Harris Ford, on Princess May, 16807.

Mare Under Three, Bred by Exhibitor—First, L. C. Tice, on Bonita, 19895; second, H. Harris Ford, on Cedric's Baroness, 20649; third, L. C. Tice, on Bethene, 19894; fourth, G. W. Merna.

Senior Champion Stallion—J. W. Hillman, on Royal Knott, (17471); Reserve, H. Harris Ford, on Prince Urbin, 18075.

Junior Champion Stallion—G. W. Merna, on Proud Archer, 20041; Reserve, H. Harris Ford, on Druid.

Grand Champion Stallion—G. W. Merna, on Proud Archer, 20041; Reserve, J. W. Hillman, on Royal Knott, (17471).

Senior Champion Mare—G. W. Merna, on Molly, 17291; Reserve, G. W. Merna, on Samuda Violet, 17936.

Junior Champion Mare—L. C. Tice, on Bonita, 19895; Reserve, on H. Harris Ford, on————.

Grand Champion Mare—E. C. Tice, on Bonita, 19895; Reserve, G. W. Merna, on Molly.

Champion Stallion, Owned in Iowa—J. W. Hillman, on Royal Knott, (17471); Reserve, H. Harris Ford, on Druid.

Champion Mare, Owned in Iowa—L. C. Tice, on Bonita, 19895; Reserve, H. Harris Ford, on————.

Get of Sire—First, L. C. Tice; second, G. W. Merna; third, H. Harris Ford; fourth, H. Harris Ford.

Produce of Mare—First, second and third, H. Harris Ford; fourth, G. W. Merna.

Grand Display—First, G. W. Merna; second, L. C. Tice; third, H. Harris Ford.

Five Stallions Owned by Exhibitor—First, H. Harris Ford.

NATIONAL DRAFT HORSE BREEDERS' FUTURITY, CLYDESDALE DIVISION.

Stallions—First, L. C. Tice, on Sultan's Chioce, 20541; second, G. W. Merna, on King Diamond, 20528; third, H. Harris Ford, on Marksman, 20774; fourth, J. W. Hillman, on Wayside Douglass, 20624.

Fillies—First, H. Harris Ford, on Cedric's Baroness, 20649; second, G. W. Merna, on Dolly's Lady, 20506; third, L. C. Tice, on Sultan's Queen, 20543; fourth, A. G. Soderberg, on Saura's Maid, 20550; fifth, South Brothers, on Davidson's Maid, 20504.

ENGLISH SHIRE.

Exhibitors—A. L. Foster, Winterset; F. A. Huddlestun, Webster City; A. G. Soderburg, Osco, Illinois; Truman's Pioneer Stud Farm, Bushnell, Illinois; Carroll McKibben, Earlham; Smith Brothers, Altoona.

JUDGE.................................W. H. PEW, Ravenna, Ohio

Stallion Four Years or Over—First, Truman's Pioneer Stud Farm, on Kirtling Bold Lion, (30593), 16769; second, F. A. Huddlestun, on Severn Flag, (28663), 12749.

Stallion Over Three, Under Four—First, Tom Skola, on Starlight King, 15903; second, Truman's Pioneer Stud Farm, on Captain Osgood, 16048; third, Truman's Pioneer Stud Farm, on Wrydelands Draymen, (34476), 16064; fourth, A. L. Foster, on Winterset Boy, 17524.

Stallion Over Two, Under Three—First, Truman's Pioneer Stud Farm, on Eureka Standard, 17319; second, Trumans, on Witchman Minstrel, II, 17011; third, Smith Brothers, on Wilfred, 17275.

Stallion Foal—First, F. A. Huddlestun, on Edgewood's Chief; second, Smith Brothers, on Altoona Prince.

Stallion Three Years or Over, Bred by Exhibitor—No award.

Stallion, Under Three, Bred by Exhibitor—First, F. A. Huddlestun, on Edgewood Chief; second, Smith Brothers, on Wilfred, 17275; third, Smith Brothers, on Ace of Hearts, 17937.

Yeld Mare Four Years or Over—First, Trumans, on Royal Tulip, 14676; second, F. A. Huddlestun, on Edgewood Dianah, 13598.

Mare and Foal—First, F. A. Huddlestun, on Heale Easter Eve, 9003; second, Smith Brothers, on Mable Smith.

Filly Over Three, Under Four—First, Truman's, on Truman's Double Daisy, 17230; second, F. A. Huddlestun, on Flash Gertrude, 16195; third, F. A. Huddlestun, on Fair Lily, 17464.

Filly Over Two, Under Three—First, Trumans, on Queen Smart, 17014.

Mare Foal—First, Smith Brothers, on Mable's May.

Mare Three Years or Over, Bred by Exhibitor—First, F. A. Huddlestun, on Edgewood Dinah, 13598; second, Smith Brothers, on Mable Smith, 11399.

Mare Under Three, Bred by Exhibitor—First, Smith Brothers, on Velda; second Smith Brothers, on Mable's May; third, Smith Brothers, on Gene; fourth, Smith Brothers, on Leona.

Senior Champion Stallion—Trumans, on Kirtling's Bold Lion, (30593), 16769; Reserve, Tom Skola, on Starlight King, 15903.

Junior Champion Stallion—Trumans, on Eureka Standard, 17319; Reserve, Trumans, on Williams, Dan Patch, 17636.

Grand Champion Stallion—Trumans, on Kirtling Bold Lion, (40594), 16769; Reserve, Trumans, on Eureka Standard, 17319.

Senior Champion Mare—Trumans, on Royal Tulip, 14676; Reserve, Trumans, on Truman's D. Daisy.

Junior Champion Mare—Smith Brothers, on Velda; Reserve, Trumans, on Queen Smart, 17014.

Grand Champion Mare—Trumans, on Royal Tulip 14676; Reserve, Smith Brothers, on Velda, 17996.

Champion Stallion, Owned in Iowa—F. A. Huddlestun, on Severn Flag, (28763), 12749; Reserve, Tom Skola, on Starlight King, 15903.

Champion Mare Owned in Iowa—F. A. Huddlestun, on Edgewood Dinah, 13598; Reserve, F. A. Huddlestun, on Heale Easter Eve, (51628), 9003.

Get of Sire—Smith Brothers.

Produce of Mare—Smith Brothers.

Grand Display—First, Trumans; second, F. A. Huddlestun; third, Smith Brothers.

Five Stallions, Owned by Exhibitors—First, Trumans.

NATIONAL DRAFT HORSE BREEDERS' FUTURITY, ENGLISH SHIRE DIVISION.

Fillies—First, Smith Brothers, on Velda, 17996; second, Trumans, on Hawthorne Rose, 17420; third, Smith Brothers, on Gene, 17994; fourth, Smith Brothers, on Leona, 17995.

Stallions—First, Trumans, on William Dan Patch; second, Smith Brothers, on Ace of Hearts, 17937.

SPECIAL PRIZES OFFERED BY THE AMERICAN SHIRE HORSE ASSOCIATION.

Champion Stallion, Any Age—Trumans, on Kirtling Bold Lion, (30593), 16769.

Champion Mare, Any Age—Trumans, on Royal Tulip, 14676.

Best American.. Bred Stallion, Any Age—Trumans, on Eureka Standard, 17319.

Best American Bred Mare, Any Age—Trumans, on Royal Tulip, 14676.

SPECIAL PRIZES OFFERED BY THE SHIRE HORSE SSOCIETY OF GREAT BRITAIN AND IRELAND.

Best Stallion—Trumans, on Kirtling Bold Lion, (30593), 16769.

Best Mare—Trumans, on Royal Tulip, 14676.

BELGIANS.

Exhibitors—C. A. Ackerman, Perry; J. J. Bonnstetter, Corwith; H. V. Caldwell, Kanawha; Crownover and Brandhurst, Hudson; Champlin Brothers, Clinton; W. C. Estes, Packwood; C. G. Good, Ogden; P. W. Heil, Garrison; Chas. Irvine, Ankeny; Iowa State College, Ames; H. Lefebure Fairfax; J. A. Loughridge, Delta; J. C. Richie, Stratford; I. W. Van Nice, Garrison; Fred L. Dunbar, Grimes; Casey Brothers, Iowa City.

Judge..................................J. L. DeLancy, Chicago, Ill.

Stallion Four Years or Over—First, Lefebures, on Reavedore, 8998; second, Lefebures, on Mon Gros, 5937.

Stallion Over Three, Under Four—First, Lefebures, on Aiser, 10140; second, Champlin Brothers, on King de Roosbeke, 10084; third, Lefebures, on Duke of Elmwood, 9957; fourth, Lefebures, on Eddie, 9716; fifth, Lefebures, on Roscoe, 9792.

Stallion Over Two, Under Three—First, Lefebures, on Fairfax Major, 10672; second, W. C. Estes, on Black Bruno, 10342; third, Lefebures, on Fairfax Jean, 10421.

Stallion Three Years or Over, Bred by Exhibitor—First, Champlin Brothers, on King de Roosbeke, 10084.

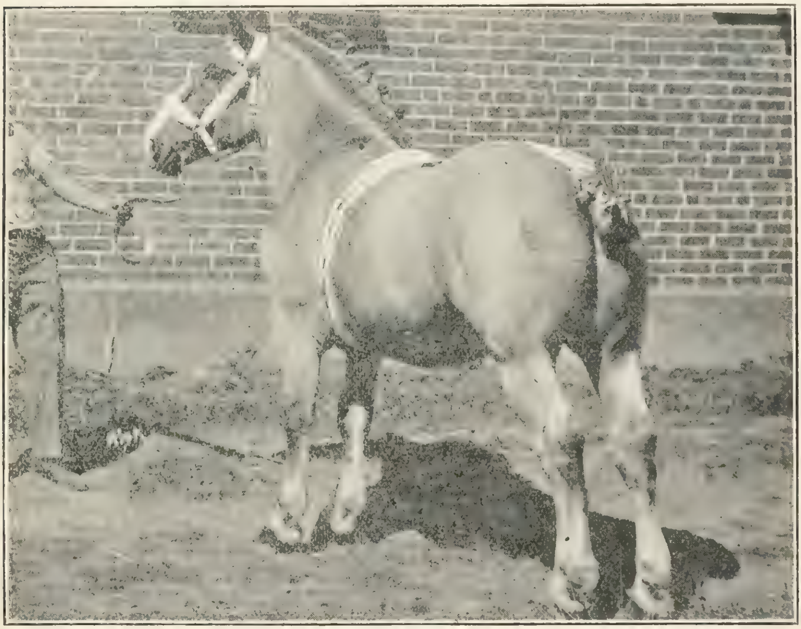
Stallion Under Three, Bred by Exhibitor—First, J. A. Loughridge, on Jean Bart III, 10942.

Yeld Mare, Four Years or Over—Lefebures, on Rita, 4368; second, Lefebures, on Radius IV, 4703; third, W. C. Estes, on Bay Beauty, 3379; fourth, Lefebures, on Homerine, 4360.

Filly Over Three, Under Four—First, Lefebures, on Nanett II, 4938.

Filly Over Two, Under Three—First, Champlin Brothers, on Eliza de Roosbeke, 6076.

Mare Foal—First, Iowa State College, on College Dream; second, Lefebures, on Lefebures' Fancy.



FAIRFAX MAJOR
Junior and Reserve Grand Champion Belgian Stallion at the 1918 Iowa State Fair. Owned by Henry Lefebure's Sons Co., Fairfax.

Mare Three Years or Over, Bred by Exhibitor—First, W. C. Estes, on Bay Beauty, 3379; second, Lefebures, on Nanette second, 4938; third, Lefebures, on Radius fourth, 4703.

Mare Under Three, Bred by Exhibitor—First, Lefebures, on Fairfax Rudge, 6432; second, Champlin Brothers, on Eliza De Roosbeke, 6076; third, W. C. Estes, on Bright Beauty, 6696; fourth, W. C. Estes, on Maggie de Ghorian, 6697.

Senior Champion Stallion—Lefebures, on Aiser, 10140; Reserve, Lefebures, on Reavedore, 8998.

Junior Champion Stallion—Lefebure, on Fairfax Major, 10672; Reserve, J. A. Loughridge, on Jean Bart III, 10942.

Grand Champion Stallion—Lefebures, on Aiser, 10140; Reserve, Lefebures, on Fairfax Major, 10672.

Senior Champion Mare—Lefebures, on Rita, 4368; Reserve, Lefebures, on Nanette II, 4938.

Junior Champion Mare—Lefebures, on Fairfax Rudge, 5342.

Grand Champion Mare—Lefebures, on Rita, 4368; Reserve, Lefebures, on Fairfax Rudge, 6342.

Champion Stallion Owned in Iowa—Lefebures, on Aiser, 10140; Reserve, Lefebures, on Fairfax Major, 10672.

Champion Mare Owned in Iowa—Lefebures, on Rita, 4368; Reserve, Lefebures, on Fairfax Rudge, 6342.

Produce of Mare—First and third, Lefebures; second, W. C. Estes.

Grand Display—First, Lefebures; second, W. C. Estes.

Five Stallions Owned by Exhibitor—First, Lefebures.

NATIONAL DRAFT HORSE BREEDERS' FUTURITY. BELGIAN DIVISION.

Stallions—First, J. A. Loughridge, on Jean Bart III, 10942.

Fillies—First, Lefebures, on Fairfax Rudge, 6342; second, W. C. Estes, on Bright Beauty, 6696; third, Champlin Brothers, on Rosette, 6738; fourth, Champlin Brothers, on Sadie de Roosbeke, 6067; fifth, W. C. Estes, on Maggie de Ghorain, 6687.

SPECIAL PRIZES OFFERED BY THE AMERICAN ASSOCIATION OF IMPORTERS AND BREEDERS OF BELGIAN DRAFT HORSES FOR 1918.

Stallion Four Years or Over—First, Lefebures, on Reavedore, 8998; second, Lefebures, on Mon Gros, 5937.

Stallion Three Years Old and Under Four—First, Lefebures, on Aiser, 10140; second, Champlin Brothers, on King de Roosbeke, 10084; third, Lefebures, on Duke of Elmwood, 9957; fourth, Lefebures, on Eddie, 9716; fifth, Lefebures, on Roscoe, 9792.

Stallion Two Years Old and Under Three—First, Lefebures, on Fairfax Major, 10672; second, W. C. Estes, on Black Bruno, 10342; third, Lefebures, on Fairfax Jean, 10421.

Stallion One Year Old and Under Two—First, J. A. Loughridge, on Jean Bart III, 10942.

Mare Four Years Old or Over—First, Lefebures, on Rita, 4368; second, Lefebures, on Radius fourth, 4703; third is W. C. Estes, on Bay Beauty, 3379; fourth, Lefebures, on Homerine, 4360.

Mare Three Years Old and Under Four—First, Lefebures, on Nanette II, 4938.

Mare Two Years Old and Under Three—First, Champlin Brothers, on Eliza de Roosbeke, 6076.

Mare One Year Old and Under Two—First, Lefebures, on Fairfax Rudge, 6342; second, W. C. Estes, on Bright Beauty, 6696; third, Champlin Brothers, on Rosette, 6738; fourth, Champlin Brothers, on Sadie de Roosbeke, 6067; fifth, W. C. Estes, on Maggie de Ghorain, 6697.

Junior Champion Stallion Under Three Years of Age—Lefebures, on Fairfax Major, 10672; Reserve, J. A. Loughridge, on Jean Bart, III, 10942.

Senior Champion Stallion, Three Years and Over—Lefebures, on Aiser, 10140; Reserve, Lefebures, on Reavedore, 8998.

Grand Champion Stallion—Lefebures, on Aiser, 10140; Reserve, Lefebures, on Fairfax Major, 10672.

Junior Champion Mare Under Three Years of Age—Lefebures, on Fairfax Rudge, 6342.

Senior Champion Mare Three Years and Over—Lefebures, on Rita, 4368; Reserve, Lefebures, on Nanette II, 4938.

Grand Champion Mare—Lefebures, on Rita, 4368; Reserve, Lefebures, on Fairfax Rudge, 6342.

Five Stallions, Property of One Exhibitor—Lefebures.

Premier Exhibitor—First, Lefebures.

Premier Breeder—First, Lefebures.

DRAFT GELDINGS AND MARES.

EXHIBITORS—Bulechek & Waters, Iowa City; W. C. Estes, Packwood; H. Harris Ford, Storm Lake; C. G. Good, Ogden; Nelson Gormley, Bondurant; Chas. Irvine, Ankeny; Frank Keenan & Son, Shenandoah; H. Lefebure & Sons, Fairfax; Lee Brothers, Mitchellville; James Pedley, Britt; J. C. Ritchie, Stratford; I. W. Van Nice, Garrison; Wilson & Company, Chicago; J. O. Gring, Dallas Center.

JUDGE................................R. B. OGILVIE, Chicago, Ill.

Gelding or Mare Four Years or Over—First, James Pedley, on Ross; second, Nelson Gormley, on Dick; third, Nelson Gormley, on Doc; fourth, Lee Brothers, on Fannie; fifth, Nelson Gormley, on Don.

Gelding or Mare Three Years and Under Four—First, J. C. Ritchie, on Queen.

Gelding or Mare Two Years and Under Three—First, J. O. Gring, on Barney.

Horse or Filly Foal—First, Lee Brothers, on Nellie; second, J. C. Ritchie, on Doc.

Farmers' Team—First, Charles Irvine; second, Lee Brothers; third, Nelson Gormley; fourth, Nelson Gormley; fifth, Frank Keenan & Son.

Gelding or Mare Three Years or Over—First, Wilson & Co., on College Prince; second, Wilson & Co., on Samuda; third, Wilson & Co., on Cedric; fourth, Wilson & Co., on Merna; fifth, Wilson & Co., on Hixson; sixth, Wilson & Co., on Dainty Day.

Draft Team in Harness—First, second, third and fourth, Wilson & Company, fifth, Nelson Gormley.

Champion Gelding or Mare—Wilson & Company, on College Prince; Reserve, Wilson & Company, on Samuda.

Four Horse Team—First, Wilson & Company.

Six Horse Team—First, Wilson & Company.

SPECIAL PRIZES OFFERED BY R. B. OGILVIE OF CHICAGO AND J. W. KENNEDY OF SIOUX CITY.

For best gelding or grade draft mare any age or breed, bred in the state of Iowa and shown at the Iowa State Fair 1918—First, Wilson & Company, on College Prince; second, Wilson & Company, on Hixson.

For the best grade foal of either sex, any breed, bred and owned in the state of Iowa and shown at the Iowa State Fair of 1918—First, Lee Brothers, on Nellie; second, J. C. Ritchie, on Doc.

ROADSTERS.

EXHIBITORS—Thomas Bass, Mexico, Missouri; Buford & Williams, Paris, Missouri; Griffin & Porter, Riverside; Hamilton Brothers, Keota; Loula Long, Lee's Summit, Missouri; B. F. Redman, Oskaloosa; C. R. Wells, Washington; F. R. Wilson, Colo.

JUDGES.................. { W. J. KENNEDY, Sioux City, Iowa.
E. A. TROWBRIDGE, Columbia, Mo.
HENRY CULLINS, Devon, Pa.

Stallion, Mare or Gelding—First, Hamilton Bros., on Buster Bezant, 59463; second, Buford & Williams; third, Thomas Bass; fourth, Buford & Williams, on Martha Marlow.

Pair Stallions, Mares or Geldings—First, Buford & Williams; second, C. R. Wells; third, Thomas Bass.

RUNABOUTS.

Exhibitors—Thomas Bass, Mexico, Missouri; Buford & Williams, Paris, Missouri; Griffin & Porter, Riverside; Hamilton Bros., Keota; Mrs. Francis S. Peabody, Hinsdale, Illinois; John R. Thompson, Chicago, Illinois; C. R. Wells, Washington; Worcester Valley Farm, Philadelphia, Pennsylvania.

Judges.................. W. J. Kennedy, Sioux City, Iowa.
E. A. Trowbridge, Columbia, Mo.
Henry Cullins, Devon, Pa.

Stallion, Mare or Gelding—First, Worcester Valley Farm, on Advance Guard, 45938;s econd, Worcester Valley Farm, on Adora, 2678; third, Thomas Bass, on King Master; fourth, Hamilton Bros., on Buster Besant, 59460.

Pair Stallions, Mares or Geldings—First, Worcester Valley Farm; second, Worcester Valley Farm; third, Buford & Williams; fourth, Thomas Bass.

LADIES TURNOUT.

Exhibitors—Buford & Williams, Paris, Missouri; B. R. Pemberton. Chicago. Illinois; Worcester Valley Farm, Philadelphia, Pennsylvania.

Judges.................. W. J. Kennedy, Sioux City, Iowa.
E. A. Trowbridge, Columbia, Mo.
Henry Cullins, Devon, Pa.

Single Mare or Gelding—First, Worcester Valley Farm, on The Spring Maid; second, Worcester Valley Farm, on George Washington; third, Worcester Valley Farm, on Sunny Jim; fourth, Buford & Williams.

Pair Mares or Geldings or Mare and Gelding—First, Worcester Valley Farm; second, Worcester Valley Farm; third, Buford & Williams; fourth, Worcester Valley Farm.

HIGH STEPPERS AND PARK HORSES.

Exhibitors—F. J. Shaw, Stuart, Iowa; C. R. Wells, Washington, Iowa; Worcester Valley Farm, Philadelphia, Pennsylvania.

Judges.................. W. J. Kennedy, Sioux City, Iowa.
E. A. Trowbridge, Columbia, Mo.
Henry Cullins, Devon, Pa.

Stallion, Mare or Gelding 15 to 15-2—First, Worcester Valley Farm, on The Spring Maid; second, Worcester Valley Farm, on George Washington; third, Worcester Valley Farm, on Martha Washington.

Stallion, Mare or Gelding 15-2 and Over—First, Worcester Valley Farm, on Maid of America; second, Worcester Valley Farm, on Gallant Lad; third, Worcester Valley Farm, on Sunny Jim.

Pair Stallions, Mares or Geldings 15 to 15-2—First, Worcester Valley Farm; second, Worcester Valley Farm.

Pair Stallions, Mares or Gelding, any Height, Horse Alone to be Considered—First, Worcester Valley Farm; second, Worcester Valley Farm; third, Worcester Valley Farm, fourth, Worcester Valley Farm.

Stable Managers' Prizes—First, Worcester Valley Farm; second, Buford & Williams; third, Hamilton Bros.; fourth, C. R. Wells.

GIG HORSES.

Exhibitors—Thomas Bass, Mexico, Missouri; T. J. Shaw, Stuart, Iowa; Worcester Valley Farm, Philadelphia, Pennsylvania.

Judges.................. Henry Cullins, Devon, Pa.
W. J. Kennedy, Sioux City, Iowa.

Horses Not Exceeding 15-2—First, Worcester Valley Farm, on The Spring Maid; second, Worcester Valley Farm, on Martha Washington; third, Worcester Valley Farm, on George Washington; fourth, Worcester Valley Farm, on Advance Guard.

Horses Over 15-2—First, Worcester Valley Farm on Gallant Lad; second, Worcester Valley Farm, on Made in America; third, Worcester Valley Farm, on Over the Top; fourth, Worcester Valley Farm, on Sunny Jim.

TANDEMS.

Exhibitors—Worcester Valley Farm, Philadelphia, Pennsylvania.

Judges..................Henry Cullins, Devon, Pa.
W. J. Kennedy, Sioux City, Iowa.

Tandem Team, Any Size, Horses Alone to be Considered—First and second, Worcester Valley Farm.

Tandem Team, Wheeler Under 15-2—First and second, Worcester Valley Farm.

Tandem Team, Any Size, Horses Alone to be Considered—First and second, Worcester Valley Farm.

UNICORNS.

Exhibitors—Worcester Valley Farm, Philadelphia, Pennsylvania.

Judges..................Henry Cullins, Devon, Pa.
W. J. Kennedy, Sioux City, Iowa.

Unicorn Team 15-1 and Over—First, Worcester Valley Farm.

FOUR-IN-HAND.

Exhibitors—Worcester Valley Farm, Philadelphia, Pa.

Judges..............................Henry Cullins, Devon, Pa.
J. W. Kennedy, Sioux City, Iowa

Road Four—First, Worcester Valley Farm.

Park Four—First, Worcester Valley Farm.

CHAMPIONSHIP HARNESS HORSE.

Judges..............................Henry Cullins, Devon, Pa.
J. W. Kennedy, Sioux City, Iowa

Champion Harness Stallion—Worcester Valley Farm, on Advance Guard.

Champion Harness Mare or Gelding—Worcester Valley Farm on Made in America; reserve, Worcester Valley Farm on Geo. Washington.

SADDLE HORSES.

FIVE GAITED.

Exhibitors—Thomas Bass, Mexico, Mo.; Buford & Williams, Paris, Mo.; Geo. Brandeis, Omaha, Neb.; Griffin & Porter, Riverside, Ia.; Hamilton Bros., Keota, Ia.; Loula Long, Lees Summit, Mo.; B. R. Pemberton, Chicago, Ill.; Col. E. G. Pratt, Chicago, Ill.; B. F. Redman, Oskaloosa, Ia.; Walter Schuttler, Chicago, Ill.; C. F. Storm, Dexter, Iowa.; F. J. Shaw, Stuart, Ia.; John Wallace, Des Moines; C. R. Wells, Washington, Ia.; Mrs. N. M. Hubbard, Des Moines, Iowa.

Judges..............................Henry Cullins, Devon, Pa.
E. A. Trowbridge, Columbia, Mo.

Stallion Four Years Old or Over—First, Buford & Williams, on Auto B. King; second, Mrs. N. M. Hubbard on Lightheart 7275; third, Thomas Bass on Omaha Chief 8334; fourth, C. R. Wells on Lonnie McDonald; fifth, B. R. Pemberton on Columbia Chief 5437.

Stallion Three Years Old and Under Four—First, Buford & Williams on Johnny Hook; second, B. F. Redman on Easter Flower 7525; third, C. F. Storm on Astral McDonald 7519.

Stallion Two Years Old and Under Three—First, Buford & Williams.

Mare Four Years Old and Over—First, W. C. Mortimer on Sunny Wild Rose; second, B. R. Pemberton on Glenn Geary; third, Buford & Williams on Eva Brown; fourth, George Brandeis on Princess McDonald; fifth, Buford & Williams on Gobrifida; sixth, Hamilton Bros. on Virginia Lear, 13355.

Mare Three Years Old and Under Four—First, Griffin & Porter on Mayla Dare 12954; second, C. F. Storm on Best's Baby Doll 12956.

Mare Two Years Old and Under Three—First, Griffin & Porter on Twilight Belle 13716.

Gelding Four Years Old and Over—First, Hamilton Bros. on Red Cross; second, Buford & Williams on Douglas Fairbanks; third, Thomas Bass on King O.; fourth, George Brandeis on Fashion Plate; fifth, C. R. Wells on War Times.

Gelding Three Years Old and Under Four—First, Buford & Williams on Cousin Harry; second, C. R. Wells on Iowa Chief 6996; third, B. R. Pemberton.

WALK, TROT OR CANTER.

Mare or Gelding, Any Age, Under 15-2 and Up to Carrying 200 Pounds—First, Buford & Williams on Lady Redwing; second, Thomas Bass on King; third, Hamilton Bros. on Purity; fourth, Buford & Williams; fifth, C. R. Wells on War Times.

Mare or Gelding, Any Age, Under 15-2—First, Walter Schuttler on Hazel Deal 11218; second, C. R. Wells on Peaches 11793; third, Buford & Williams; fourth, Thomas Bass on Petra B.; fifth, Buford & Williams.

Pair Three Gaited Saddle Horses—First, Buford & Williams; second, Buford & Williams; third, C. R. Wells.

Pair Five Gaited Saddle Horses—First and second, Buford & Williams; third, C. R. Wells.

LADIES' RIDING.

Best Lady or Girl Rider on Suitable Mount—First and third, Buford & Williams; second, Mrs. Adam Stirling.

COMBINED SADDLE & HARNESS HORSES.

Stallion, Mare or Gelding, Any Age, Five Gaited—First, W. C. Mortimer on Sunny Wild Rose; second, George Brandeis on Fashion Plate; third, Buford & Williams; fourth, Hamilton Brothers on Red Cross; fifth, Buford & Williams on Susan Francis.

Stallion, Mare or Gelding, Any Age, Three Gaited—First, B. R. Pemberton on General Foch; second, Hamilton Brothers on Red Cross; third, fourth, Buford & Williams; fifth, C. R. Wells on Peaches.

HIGH SCHOOL HORSES.

Stallion, Mare or Gelding, Any Age—First, Thomas Bass on Belle Beach; second, C. R. Wells on Rex Wells; third, John Wallace on Ginger.

LOCAL, OWNED IN IOWA.

Stallion, Mare or Gelding, Five Gaited, Three Years or Over—First, Hamilton Brothers on Red Cross; second, Mrs. N. M. Hubbard on Light Heart; third, Hamilton Brothers on Virginia Lear; fourth, C. R. Wells on Lonnie McDonald.

Stallion, Mare or Gelding, Three Gaited, Three Years or Over—First, Hamilton Brothers on Red Cross; second. Mrs. N. M. Hubbard on Light Heart; third, Hamilton on Purity; fourth, C. R. Wells on Peaches, 11793.

SPECIAL PRIZE OFFERED BY THE AMERICAN SADDLE HORSE BREEDERS' ASSOCIATION.

Stallion, or Mare, Three Years or Under to Be Shown to Hand—First, C. F. Storm on Best Baby Doll.

HUNTERS AND HIGH JUMPING.

HUNTERS.

Light Weight Hunters—First, W. C. Mortimer on Nicotine.

Middle Weight Hunters—First, W. C. Mortimer on White Sox; second, Sergeant W. A. Venerable on Judge.

Heavy Weight Hunters—First, W. C. Mortimer on Huntsman.

Champion Hunter—W. C. Mortimer.

Reserve Champion—Sergeant W. A. Venerable on Judge.

JUMPING.

High Jump—First, W. C. Mortimer on The Huntsman; second, Sergeant W. A. Venerable on Judge; third, W. C. Mortimer on White Sox.

MILITARY HORSES.

Gelding Suitable for Officer's Mount—First, Hamilton Brothers on Purity; second, Sergeant W. A. Venerable on Judge; third, Sergeant W. A. Venerable on Indian; fourth, W. C. Mortimer on White Sox.

Stallion Suitable to Sire Cavalry Remounts, to Be Shown to Halter—First, Mrs. N. M. Hubbard on Light Heart 7275; second, Buford & Williams; third, Hamilton Brothers on Buster Bezant; fourth, Griffin & Porter on Iowa's Pride, 7652.

STANDARD BRED TROTTERS.

Exhibitors—Thomas Bass, Mexico, Missouri; Buford & Williams, Paris, Missouri; Griffin & Porter, Riverside; Hamilton Bros., Keota; F. R. Wilson. Colo; Worcester Valley Farm, Philadelphia, Pa.; T. J. Shaw, Stuart.

Judge............................E. A. Trowbridge, Columbia, Mo.

Stallion Four Years or Over—First, Hamilton Brothers on Buster Bezant; second, T. J. Shaw on Red Mocco 42694.

Yeld Mare Four Years or Over—First, Buford & Williams.

Champion Stallion—Hamilton Brothers on Buster Bezant; Reserve, T. J. Shaw.

Champion Mare—Buford & Williams.

MORGANS.

Exhibitors—Morgan Horse Farm, Plainfield; Rev. H. F. Buettner, Hampton.

Judge............................E. A. Trowbridge, Columbia, Mo.

Stallion Four Years or Over—First, Morgan Horse Farm; second, Morgan Horse Farm on Tommy Dean 6873.

Mare Four Years or Over—First, Morgan Horse Farm on Ruperta, Vol. 3; second, Morgan Horse Farm on Jessie Hudson, Vol. 3.

Mare Over Three, Under Four—First, Rev. and Mrs. Buettner on Lady June Boy; second, Rev. and Mrs. Buettner on Flossy Hudson, Vol. 4.

Champion Stallion—Morgan Horse Farm on Prince Dean 6689; Reserve Morgan Horse Farm on Tommy Dean 6873.

Champion Mare—Morgan Horse Farm on Ruperta, Vol. 3; Reserve, Rev. and Mrs. Buettner on Lady June Boy.

SPECIAL PREMIUM OFFERED BY THE MORGAN HORSE CLUB.

Stallion, Mare or Gelding, Conforming Most Truly to the Ancient Morgan Type—Morgan Horse Farm on Ruperta.

HACKNEY.

Exhibitors—Simpson Farms, Elmhurst, Illinois.

Judge............................E. A. Trowbridge, Columbia, Mo.

Yeld Mare Four Years or Over—First, Simpson Farms.
Champion Mare—Simpson Farms.

WELSH PONIES.

Exhibitors—Mrs. Adam Stirling, Des Moines.

Judge............................W. J. Kennedy, Sioux City, Iowa

Stallion Four Years or Over—First, Mrs. Adam Stirling on Top Notch 740

Stallion or Mare Foal—First, Mrs. Adam Stirling.

Mare Four Years or Over—Mrs. Adam Stirling on Sylvan Welsh Girl 693; second, Mrs. Adam Stirling on Betty's Third 3462.

Mare Two Years, Under Three—First, Mrs. Adam Stirling on Silver Bell.

Mare and Foal—First, Mrs. Adam Stirling on Llwyn Robina.

Champion Stallion—Mrs. Adam Stirling on Top Notch 740; Reserve, Mrs. Adam Stirling on Sydney.

Champion Mare—Mrs. Adam Stirling on Sylvan Welsh Girl 693; Reserve, Mrs. Adam Stirling on Silver Bell.

Grand Display—First, Mrs. Adam Stirling.

SHETLAND PONIES.

Exhibitors—Geo. Brideson, Panora; Frank Brideson, Bayard; Mrs. Adam Stirling, Des Moines; J. C. Thompson, Jamaica; D. G. Welty, Nevada; F. R. Wilson, Colo; Robt. E. Wood, Des Moines.

Judge............................W. J. Kennedy, Sioux City, Iowa.

Stallion Four Years or Over—First, D. G. Welty on Malotte 8193; second, J. C. Thompson on Gen. Boggs 12989; third, Geo. Brideson on Sparkle Simcoke 12985.

Stallion Three Years and Under Four—First, Robt. E. Wood on Prince Larigo; second, D. G. Welty on Locust J. 16600; third, Mrs. Adam Stirling on Sydney; fourth, J. C. Thompson on Selim.

Stallion or Mare Foal—First, Mrs. Adam Stirling on Damon; second, D. G. Welty; third, Robt. E. Wood; fourth, J. C. Thompson.

Mare Four Years or Over—First, Mrs. Adam Stirling on Queen of Flett 11968; second, D. J. Welty on Kansette 8188; third, D. G. Welty on Queen Larigo 15239.

Mare Three Years Under Four—First, Mrs. Adam Stirling on Silver Spring Princess 16589; second, Geo. Brideson.

Mare Two Years, Under Three—First, D. G. Welty on Kensetta; second, Mrs. Adam Stirling; third, Geo. Brideson.

Mare and Foal—First, D. G. Welty; second, D. G. Welty on Kansette; third, Mrs. Adam Stirling on Lady Bird; fourth, D. G. Welty.

Get of Sire—First, D. G. Welty; second, J. C. Thompson; third, D. G. Welty; fourth, Mrs. Adam Stirling.

Champion Stallion—Robert E. Wood on Prince Larigo; Reserve, D. G. Welty on Malotte 8193.

Champion Mare—Mrs. Adam Stirling on Queen of Flett; Reserve, D. G. Welty on Kensette.

Grand Display—First, Mrs. Adam Stirling; second, D. G. Welty; third, D. G. Welty.

HACKNEY PONIES AND OTHERS.

Exhibitors—Simpson Farm, Elmhurst, Illinois; Mrs. Adam Stirling, Des Moines.

Judge ....W. J. Kennedy, Sioux City

Stallion Four Years or Over—First, Simpson Farms on Bantam King 11200; second, Mrs. Adam Stirling on Lammermoor King 1859; third, Simpson Farms on Talke Fire Alarm 12245.

Mare Four Years and Over—First Simpson Farms on Frillo Gem 23419; second, Simpson Farms on Dinarth Nina 24396; third, Simpson Farms on Dinarth Nancy 24397.

Mare Three Years, Under Four—First Simpson Farms on Dinnarth Naiad 24398.

Champion Stallion—Simpson Farms on Bantam King 11200; reserve, Mrs. Adam Stirling on Lammermoor King 1859.

Champion Mare—Simpson Farms on Frillo Gem 23419; reserve, Simpson Farms on Dinarth Nina 24396.

PONIES IN HARNESS (ALL BREEDS OR GRADES)

Exhibitors—George Brideson, Panora; Frank Brideson, Bayard; Griffin & Porter, Riverside; Morgan Horse Farm, Plainfield; Mrs. Adam Stirling, Des Moines; Simpson Farms, Elmhurst, Ill.; J. C. Thompson, Jamaica; D. G. Welty, Nevada; F. R. Wilson, Colo.

Judges..................Henry Cullins, Devon, Pa.
E. A. Trowbridge, Columbia, Mo.
W. J. Kennedy, Sioux City, Iowa.

Pony Under 10½ Hands—First, D. G. Welty on Pricilla 12804; second, Mrs. Adam Stirling on Faultless; third, D. G. Welty on Kansetta 8188.

Pair Ponies Under 10½ Hands—First, D. G. Welty; second, Mrs. Adam Stirling; third, Mrs. Adam Stirling; fourth, J. C. Thompson.

Pony 10½ to 11½ Hands—First, D. G. Welty on Queen F. E. 13248; second, D. G. Welty on Lady Starlight 8706; third, Mrs. Adam Stirling on General Lee 8225.

Pair Ponies 10½ to 11½ Hands—First, D. G. Welty; second, D. G. Welty; third, Geo. Brideson.

Pony 11½ to 12½ Hands—First, Mrs. Adam Stirling on Sylvan Welch Girl, 693; second, J. C. Thompson on Fay.

Pony 12½ to 13½ Hands—First, Simpson Farms on Talke Fire Alarm 12245; second, Simpson Farms on Frillo Gem 23419; third, Mrs. Adam Stirling on Top Notch 740; fourth, Mrs. Adam Stirling on Silver Bell.

Pair Ponies 12½ to 13½ Hands—First and second, Mrs. Adam Stirling.

Pony 13½ to 14½ Hands—First, Simpson Farms on Bantam King 11200; second, Mrs. Adam Stirling on Lammermoore King 1859; third Simpson Farms on Dinarth Nina 24396; fourth, Griffin and Porter on Princess Cecelia.

Pair Ponies 13½ to 14½ Hands—First and second, Simpson Farms.

Tandem Team Under 12½ Hands—First, Mrs. Adam Stirling; second, D. G. Welty.

Tandem Team Over 12½ Hands—First and second, Simpson Farms; third, Mrs. Adam Stirling.

Four-in-Hand, Under 12½ Hands—First, D. G. Welty; second, Mrs. Adam Stirling.

Four-in-Hand Over 12½ Hands—First, Simpson Farms; second, Mrs. Adam Stirling.

Champion Harness Pony—Simpson Farms on Bantam King; Reserve Simpson Farms on Frillo Jem 23419.

Champion Pair Harness Ponies—Simpson Farms; Reserve D. G. Welty.

PONIES UNDER SADDLE.

Exhibitors—Geo. Brideson, Panora; Frank Brideson, Bayard; Morgan Horse Farm, Plainfield, Iowa; Mrs. Adam Stirling, Des Moines; Simpson Farm, Elmhurst, Illinois; D. G. Welty, Nevada; F. R. Wilson, Colo.

Judges..................
Henry Cullins, Devon, Pa.
E. A. Trowbridge, Columbia, Mo.
W. J. Kennedy, Sioux City, Iowa.

Saddle Pony Under 10½ Hands—First, Mrs. Adam Stirling; second, Geo. Brideson on Dot; third, Morgan Horse Farm on Susie Ann; fourth, D. G. Welty on Pricilla 12804; fifth, Geo. Brideson on Buster.

Pony 10½ to 11½ Hands—First, Mrs. Adam Stirling; second, D. G. Welty on Lady Starlight 8706; third, Geo. Brideson on Sparkle.

Pony 11½ to 12½ Hands—First, Mrs. Adam Stirling; second, Geo. Brideson on Bower's Boy.

Pony 12½ to 13½ Hands—First, Mrs. Adam Stirling; second, Simpson Farms on Dinarth Naiad 24398; third, Mrs. Adam Stirling on Top Notch.

Pony 13½ to 14½ Hands—First, Griffin and Porter on Princess Cecelia; second, Mrs. Adam Stirling.

Champion Saddle Pony Stallion—Griffin and Porter on Cecelia; Reserve, Mrs. Adam Stirling on Actress.

Stable Managers' Prize—First, Mrs. Adam Stirling; second, D. G. Welty; third, Simpson Farms; fourth, Geo. Brideson.

MULES.

Exhibitors—Wyatt Carr & Sons, Collins; A. L. Foster, Winterset; F. L. Hutson & Son; Carroll McKibben, Earlham.

Judge..............................E. A. Trowbridge, Columbia, Mo.

Mule Four Years or Over—First and second, F. L. Hutson; third, Wyatt Carr.

Mule Over Three, Under Four—First and second, F. L. Hutson; third, Wyatt Carr.

Mule Over Two, Under Three—First, F. L. Hutson.

Mule Over One, Under Two—First, Wyatt Carr; second, Carroll McKibben.

Mule Over Fifteen Hands—First and second, F. L. Hutson; third, Wyatt Carr.

Mule Under Fifteen Hands—First and second, Wyatt Carr; third, F. L. Hutson.

Mules Over 2400 Pounds—First and Third, Wyatt Carr; second, F. L. Hutson.

Pair Mules Under 2400 Pounds—First, Wyatt Carr; second, A. L. Foster.

Tandem Team—First, Wyatt Carr.

Four Mule Team—First Wyatt Carr; second, F. L. Hutson.

Five Mules Any Age—First and third, F. L. Hutson; second, Wyatt Carr.

Champion Mule Any Age—F. L. Hutson on Queen; Reserve F. L. Hutson on Maud.

Champion Pair—F. L. Hutson; Reserve, F. L. Hutson.

JACKS AND JENNETS.

EXHIBITORS—Wyatt Carr & Sons, Collins; L. W. Hoyt, Barry, Illinois; Carroll McKibben, Earlham.

JUDGE............................E. A. TROWBRIDGE, Columbia, Mo.

Jack Four Years Old or Over—First, Wyatt Carr.

Jack Three Years Old and Under Four—First, Carroll McKibben on McHannibal 21219; second, Wyatt Carr.

Jack Two Years Old and Under Three—First, Wyatt Carr.

Jack One Year Old and Under Two—First, Wyatt Carr; second, Carroll McKibben on Roan Star 23416.

McHANNIBAL
Grand Champion Jack at the 1918 Iowa State Fair. Owned by Carroll McKibben, Earlham.

Jack Colt Under One Year Old—First, Carroll McKibben on Major.

Champion Jack—Carroll McKibben on McHannibal 21219.

Jennet Four Years Old or Over—First, Carroll McKibben.

Jennet One Year Old and Under Two—First, Carroll McKibben.

CATTLE DEPARTMENT

SUPERINTENDENT..............................H. L. PIKE, Whiting.

SHORT HORNS.

EXHIBITORS—W. C. Anderson, Norwalk; Bert Braun, Adel; G. H. Burge, Mt. Vernon; J. A. Campbell & Son Manning; Dubes & Ohlson, Aurelia; W. E. Graham & Sons, Prairie City; Wm. Herkelman, Elwood; Eben E. Jones, Rockland, Wisconsin; Loveland Stock Farms, Mt. Pleasant; H. C. Lookagaugh, Watonga, Oklahoma; C. L. McClelland, Lowden; J. W. McDermott, Kahoka, Missouri; McMillan & McMillan, Lodi, Wisconsin; Jas. Miller & Sons, Granger, Missouri; J. E. Mann, Woodbine; Chas. Miller, Arbela, Missouri; Theo. Martin, Bellevue; S. A. Nelson & Son, Malcolm, Nebraska; W. E. Pritchard, Walnut; Rockwood Farm, Ames; Reynolds Bros., Lodi, Wisconsin; Frank Toyne & Son, Rowan; Uppermill Farm, Wapello; R. E. Watts & Sons, Miles.

JUDGE..............................LESLIE SMITH, St. Cloud, Minn.

Bull Three Years or Over—First, Rookwood Farm on Knight Avon 436984; second, Wm. Herkelman on Cumberland's Standard 403207; third, W. C. Anderson on Irvingdale's Ideal, 541176.

Bull Two Years and Under Three—First, Uppermill Farm on Villager's Coronet, 476743; second, Joseph Miller on Dale Cumberland, 487928; third, Loveland Stock Farm on Ranford, 532288; fourth, Bert Brown on Royal Radium, 558137; fifth, W. E. Graham on Royal Victor, 458136; sixth, S. A. Nelson on Nelson's Type, 511095; seventh, J. A. Campbell on King Marengo, 596999.

Bull Senior Yearling—First, S. A. Nelson on Imp. Lovelay's Knight, 591495; second, Wm. Herkelman on Sultan's Model, 558846; third, Jos. Miller on Superior Cumberland, 568936.

Bull Junior Yearling—First, Jos. Miller on Cumberland's Choice, 576192; second, Frank Toyne on East Lawn's Champion Junior, 658799; third, J. W. McDermott on Crown Viscount, 643492; fourth, Dubes and Ohlson on Village Golden, 643492; fifth, G. H. Burge on Mysie Chief; sixth, J. W. McDermott on Cumberland's Gift, 575019; seventh, J. W. McDermott on Cumberland Marshall 8th; eighth, Uppermill Farm on Proud Marquis, 663566; ninth, Theo. Martin on Imp. Colynie King, 638425.

Bull Senior Calf—First, W. E. Pritchard on Captain Clarion, 654998; second, J. E. Mann on Gainford Guardian, 676806; third, W. E. Pritchard on Select Dale, 655003; fourth, W. E. Pritchard on Gallant Dale, 656001; fifth, Wm. Herkelmann on Cumberland's Model, 665804; sixth, Jos. Miller on Dale Cumberland Junior, 661071; seventh, J. W. McDermott on Cumberland Marshall 12th; eighth, S. A. Nelson on Villager's Model; ninth, Uppermill Farm on Villager's Commodore; tenth, C. L. McClellan on Gainford Stamp, 695109.

Bull Junior Calf—First, Wm. Herkelman on Cumberland's Choice, 676223; second, W. E. Pritchard on Victoria's Dale, 679497; third, Uppermill Farm on Villager's Alpine, 679488; fourth, Jos. Miller on Baron Cumberland. 679932; fifth, W. E. Graham on Royal Scotchman, 695190; sixth, Theo. Martin on Village Champion, 692212.

Cow Three Years or Over—First, Uppermill Farm on May Sultan, 195670; second, J. W. McDermott on King's Gift, 203802; third, Loveland Stock Farm; fourth, Theo. Martin on Miss Ramsden 3d.

Heifer Two Years and Under Three—First, Jos. Miller on Choice Mayflower, 497342; second, Loveland Stock Farm on Cumberland's Missie, 2nd, 561940; third, Frank Toyne on East Lawn's Baroness, 510234.

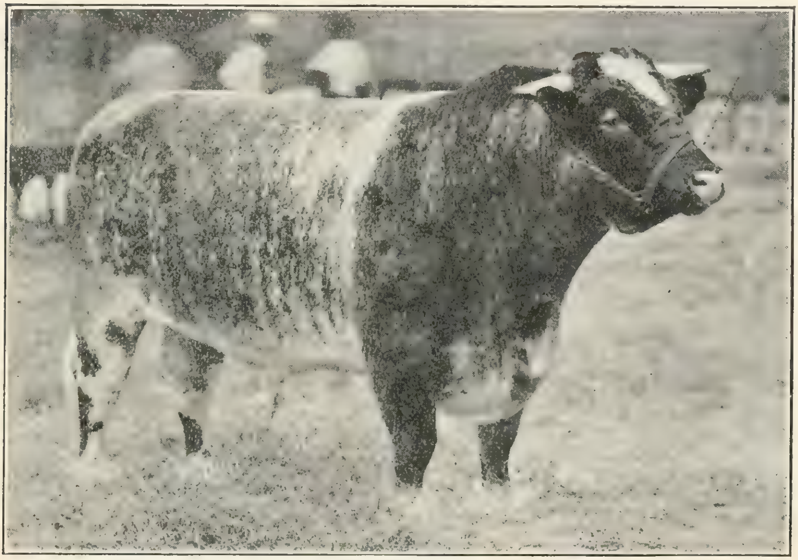
Heifer Senior Yearling—First, W. R. Pritchard, on Lady Susan, 543365; second, J. W. McDermott on Miss Cumberland, 553954; third, S. A. Nelson on Lady Augusta 9th, 578394; fourth, Uppermill Farm on Villager's Lavender, 576163; fifth, Theo. Martin on Village Rosemary, 560684; sixth, Jos. Miller on Cumberland Flower 2nd, 568538; seventh, Loveland Stock Farm on Miss Butterfly 3rd, 629651.

Heifer Junior Yearling—First, J. W. McDermott on Fair Gift 2nd, 575621; second, W. E. Pritchard on Dale Bangle, 583935; third, Jos. Miller on Cumberland's Best 2nd, 576194; fourth, Uppermill Farm on Villager's Clara 7th, 576161; fifth, Uppermill Farm on Villager's Lassie, 576162; sixth, Loveland Stock Farm on Queen of Gloster 4th, 671127; seventh, W. E. Pritchard on Victoria 74th, 607986; eighth, Wm. Herkelman on Imp. Bright Sunshine

8th, 679389; ninth, J. W. McDermott on Bernice Cumberland, 575020; tenth, J. A. Campbell on Vera's Queen, 669201.

Heifer Senior Calf—First, W. E. Pritchard on Fairview Lady 2nd, 655004; second, J. W. McDermott on Rosa Hope 21st; third, W. E. Pritchard on Rosebud 5th; 655005; fourth, Wm. Herkelmann on Scottish Violet 5th, 665806; fifth, J. E. Mann on Aberdeen Lucile; sixth, Theo. Martin on Rose of Autumn 27th, 664108; seventh, Uppermill Farm on Villager's Lass, 669858; eighth, J. W. McDermott on Marshall's Ruperta; ninth, Bert Brown on Violet Lady 3rd, 682357; tenth, J. E. Mann on Ruperta's Missie.

Heifer Junior Calf—First, Wm. Herkelmann on Village Beauty 4th, 676013; second, Uppermill Farm on Villager's May, 679494; third, J. W. McDermott on Lavender Kahoka; fourth, J. W. McDermott on Bonnie Cumberland 3rd; fifth, Jos. Miller on Cumberland Best 3rd, 679935; sixth, Loveland Stock Farm on Arbella 3rd, 687224; seventh, Uppermill Farm on Villager's Marigold, 679493; eighth, Jos. Miller on Fairview Cumberland, 679937; ninth, W. E. Pritchard on Victoria 75th, 679499; tenth, W. C. Anderson on Queen Gainford.



VILLAGERS CORNET
Grand Champion Short Horn Bull at the 1918 Iowa State Fair. Owned by Uppermill Farm, Wapello.

Champion Bull Two Years Old or Over—Uppermill Farm on Villager's Coronet, 476743.

Champion Bull Under Two Years Old—W. E. Pritchard on Captain Clarion, 654998.

Champion Cow, Two Years Old or Over—Uppermill Farm on May Sultan, 195670.

Champion Heifer Under Two Years Old—W. E. Pritchard on Lady Susan, 543365.

Grand Champion Bull Any Age—Uppermill Farm on Villager's Coronet, 476743.

Grand Champion Cow or Heifer Any Age—W. E. Pritchard on Lady Susan, 543365.

Graded Herd—First, Jos. Miller; second, Loveland Stock Farm.

Breeders' Young Herd—First, W. E. Pritchard; second, J. W. McDermott; third, Uppermill Farm; fourth, Jos. Miller; fifth, S. A. Nelson; sixth, Loveland Stock Farm.

Breeders' Calf Herd—First, W. E. Pritchard; second, Wm. Herkelman; third, J. W. McDermott; fourth, Uppermill Farm; fifth, J. E. Mann; sixth, Jos. Miller; seventh, Loveland Stock Farm; eighth, W. C. Anderson.

Get of Sire—First, Uppermill Farm; second, W. E. Pritchard; third, J. W. McDermott; fourth, Wm. Herkelmann; fifth, Jos Miller; sixth, J. W. McDermott; seventh, Loveland Stock Farm; eighth, S. A. Nelson.

Produce of Cow—First, W. E. Pritchard; second, J. W. McDermott; third, W. E. Pritchard; fourth, Jos. Miller; fifth, S. A. Nelson; sixth, Theo. Martin; seventh, Wm. Herkelman; eighth, J. W. McDermott.

GRAND NATIONAL SHORTHORN FUTURITY—AMERICAN SHORTHORN BREEDERS' ASSOCIATION.

Senior Bull Calf—First, W. E. Pritchard on Captain Clarion, 654998; second, W. E. Pritchard on Select Dale, 655003; third, Pritchard & Son on Gallant Dale, 65500; fourth, Wm. Herklemann on Cumberland's Model, 665804; fifth, Jos. Miller & Sons on Dale Cumberland Jr., 661071; sixth, Wm. Herkelmann on Cumberland's Heir, 665803; seventh, Theo. Martin on Village Stamp, 664107; eighth, Uppermill Farm on Villager's Archer, 669851; ninth, Jos. Miller & Sons on Cumberland Heir, 653718; tenth, Loveland Stock Farm on Select Knight, 669845; eleventh, Loveland Stock Farm on Rosewood's Heir, 669844; twelfth, Theo. Martin on Village Gloster, 664106.

Junior Bull Calf—First, Wm. Herkelmann on Cumberland's Choice 676223; second, W. E. Pritchard on Victorious Dale, 679497; third, Uppermill Farm on Villager's Alpine, 679488; fourth, Joseph Miller & Sons on Baron Cumberland, 679932; fifth, Theo. Martin on Village Champion, 692212.

Senior Heifer Calf—First, W. E. Pritchard on Fairview Lily II, 655004; second, W. E. Pritchard on Rosebud 5th, 655005; third, Wm. Herkelmann on Scottish Violet 5th, 665806; fourth, Theo. Martin on Rose of Autumn 27th, 664108; fifth, Uppermill Farm on Villager's Lass, 669854; sixth, Loveland Stock Farm on Village Maid 5th, 669850.

Junior Heifer Calf—First, Wm. Herkelmann on Village Beauty 4th, 676013; second, Uppermill Farm on Villager's May, 679494; third, Jos. Miller & Sons on Cumberland Bess 3rd, 679935; fourth, Loveland Stock Farm on Arbella 3rd, 687224; fifth, Uppermill Farm on Villager's Marigold, 679493; sixth, Jos. Miller & Son on Fairview Cumberland, 679937; seventh, W. E. Pritchard on Victoria 75th, 679499.

For Best Bull Calf—J. E. Mann on Gainford Guardian, 676806.

Best Heifer Calf—J. E. Mann on Aberdeen Lucille.

IOWA SHORTHORN SPECIALS.

Bull Three Years or Over—First, Rookwood Farm on Knight Avon, 436984; second, Wm. Herkelman on Cumberland's Standard, 403027; third, W. C. Anderson on Irvingdale's Ideal, 541176.

Bull Two Years Under Three—First, Uppermill Farm on Villager's Coronet, 476743; second, Loveland Stock Farm on Ranford, 532288; third, Bert Brown on Royal Radium, 558137; fourth, W. E. Graham on Royal Victor, 458136; fifth, J. A. Campbell on King Marengo, 596999.

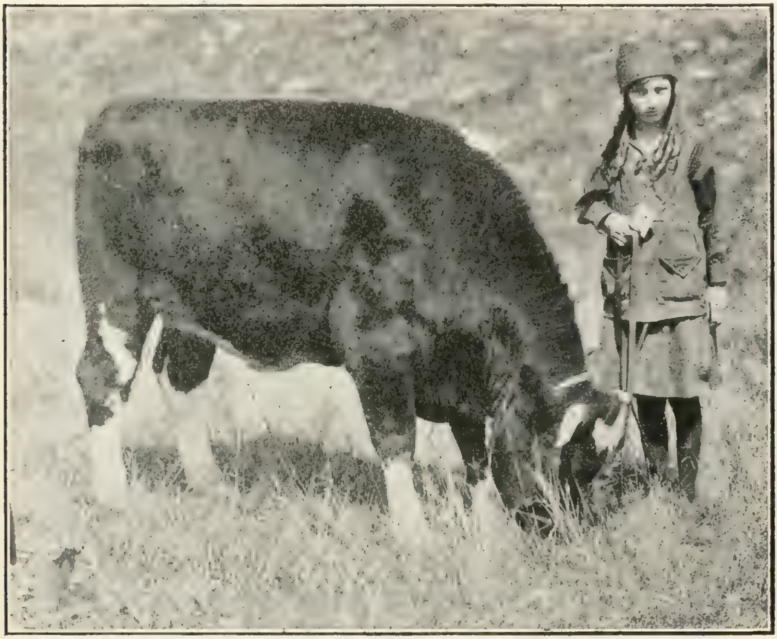
Bull Senior Yearling—First, Wm. Herkelman on Sultan's Model, 558846.

Bull Junior Yearling—First, Frank Toyne on East Lawn's Champion Junior, 576155; second, Dubes and Ohlson on Village Golden, 643492; third, G. H. Burge on Mysie Chief; fourth, Uppermill Farm on Proud Marquis, 663566; fifth, Theo. Martin on Imp. Colynie King, 638425.

Bull Senior Calf—First, W. E. Pritchard on Captain Clarion, 654998; second, J. E. Mann on Gainford Guardian, 676806; third, W. E. Pritchard on Select Dale, 655003; fourth, W. E. Pritchard on Gallant Dale, 655001; fifth, Wm. Herkelman on Cumberland's Model, 665804; sixth, Uppermill Farm on Villager's Commodore.

Bull Junior Calf—First, Wm. Herkelman on Cumberland's Choice, 676223; second, W. E. Pritchard on Victoria's Dale, 679497; third, Uppermill Farm on Villager's Alpine, 679488; fourth, W. E. Graham on Royal Scotchman, 695190; fifth, Theo. Martin on Village Champion, 692212.

Cow Three Years or Over—First, Uppermill Farm on May Sultan, 195670; second, Loveland Stock Farm; third, Theo. Martin on Miss Ramsden 3rd.



Josephine Garden of Louisa county and her Shorthorn heifer that won second prize in the baby beef contest.

Heifer Two Years, Under Three—First, Loveland Stock Farm on Cumberland's Missie 2nd, 561940; second, Frank Toyne on East Lawn's Baroness, 510234.

Heifer Senior Yearling—First, W. E. Pritchard on Lady Susan, 543365; second, Uppermill Farm on Villager's Lavendar, 576163; third, Theo. Martin on Village Rosemary, 560684; fourth, Loveland Stock Farm on Miss Butterfly 3rd, 629651.

Heifer Junior Yearling—First, W. E. Pritchard on Dale Bangle, 583935; second, Uppermill Farm on Villager's Clara 7th, 576161; third, Uppermill Farm on Villager's Lassie, 576162; fourth, Loveland Stock Farm on Queen of Gloster 4th, 671127; fifth, W. E. Pritchard on Victoria 74th, 607986; sixth, Wm. Herkelman on Imp. Bright Sunshine 8th, 679389.

Heifer Senior Calf—First, W. E. Pritchard on Fairview Lady 2nd, 655004; second, W. E. Pritchard; third, Wm. Herkelman; fourth, J. E. Mann; fifth, Theo. Martin; sixth, Uppermill Farm.

Heifer Junior Calf—First, Wm. Herkelman on Village Beauty 4th, 676013; second, Uppermill Farm on Villager's May, 679494; third, Loveland Stock Farm on Arbella 3rd, 687224; fourth, Uppermill Farm on Villager's Marigod, 679493; fifth, W. E. Pritchard on Victoria 75th, 679499; sixth, W. C. Anderson on Queen Gainford.

Graded Herd—Loveland Stock Farm.

Breeders' Young Herd—First, W. E. Pritchard; second, Uppermill Farm; third, Loveland Stock Farm.

Breeders' Calf Herd—First, W. E. Pritchard; second, Wm. Herkelman; third, Uppermill Farm; fourth, J. E. Mann; fifth, Loveland Stock Farm; sixth, W. C. Anderson.

Get of Sire—First, Uppermill Farm; second, W. E. Pritchard; third, Wm. Herkelman; fourth, Loveland Stock Farm; fifth, Theo. Martin; sixth, W. C. Anderson.

Produce of Cow—First and second, W. E. Pritchard; third, Theo. Martin; fourth, Wm. Herkelman.

SPECIAL PREMIUMS OFFERED BY THE IOWA SHORTHORN BREEDERS' ASSOCIATION.

Best Senior Bull Calf—W. E. Pritchard on Captain Clarion, 654998.

Best Junior Bull Calf—Wm. Herkelmann on Cumberland's Choice, 676223.

Best Senior Heifer Calf—W. E. Pritchard on Fairview Lady.

Best Junior Heifer Calf—Wm. Herkelmann on Village Beauty 4th.

HEREFORD.

Exhibitors—M. W. Beatty, Valley Junction; E. M. Cassiday & Son, Whiting; Jesse Engle & Son, Sheridan, Missouri; Enochs & Worthman, Jackson, Mississippi; Robert H. Hazlett, Eldorado, Kansas; O. Harris & Sons, Harris, Missouri; N. D. Pike, Weatherford, Oklahoma; Smith Farm, Kansas City, Missouri; Samuel H. Turner, Kansas City, Missouri; Wallace & E. G. Good, Kansas City, Missouri; Walter L. Yost, Kansas City, Missouri.

Judge..............................H. O. Moxley, Shelbyville, Ky.

Bull Three Years Old or Over—First, Walter L. Yost on Braemore, 666666; second, Enochs & Wortman on Prince Rupert, 69th, 476324; third, E. M. Cassady on Golden Lad, 381477; fourth, M. W. Beatty on Sir Simoon, 49th, 453924.

Bull Two Years, Under Three—First, O. Harris on Repeater Jr., 696355; second, Walter L. Yost on Arranmore, 634001; third, Enochs and Wortman on Jolly Donald, 5544084; fourth and fifth, Smith Farms.

Bull Senior Yearling—First, Wallace and Good on Good Donald 3rd, 635036; second, Jesse Engle on Beau Blanchard, 53rd, 623114; third, Robt. W. Hazlett on Beau Baltimore 25th, 605498; fourth, Smith Farm on Perfect Boy, 637459.

Bull Junior Yearling—First, Robt. W. Hazlett on Bocaldo 11th, 634518; second, O. Harris on Repeater 129th, 618940; third, Robt. W. Hazlett on Hazford Rupert, 634535; fourth, Samuel G. Turner on Laurel Perfection, 641966; fifth, Walter L. Yost on Beau Champion, 616108; sixth, Samuel G. Turner on Don Laurel 1st, 641962; seventh, Enochs and Wortman on Dunbar King 8th, 625498; eighth, E. M. Cassady on Gold Nugget, 609202; ninth, Smith Farm on Slumber, 717724; tenth, Chas. D. Davis.

Bull, Senior Calf—First, O. Harris on Repeater 191st, 690639; second, O. Harris on Repeater 192nd, 690640; third, Robert W. Hazlett on Publican 7th, 685038; fourth, Walter L. Yost on Beau Graphic, 694179; fifth, Enochs & Wortman on Trademark 9th, 692129; sixth, E. M. Cassidy on Matchless Stanway, 700122; seventh, Wallace & Good on Beau Best, 668296; eighth, Smith Farm on Perfect Prince, 717720; ninth, Samuel G. Turner on Laurel Prince, 702097; tenth, Jesse Engle.

Bull, Junior Calf—First, Walter L. Yost on Bonnie Lad Jr., 694185; second, Smith Farm on Pleasant Prince, 717722; third, Smith Farm on Prince Superior, 717723; fourth, Wallace & Good on Good Donald 22nd, 716208; fifth, E. M. Cassidy on Bright Stanway 2nd, 700111; sixth, E. M. Cassady on Sir Stanway, 700125; seventh, E. M. Cassady on Bright Edward, 700104.

Cow, Three Years or Over—First, Enochs & Wortman on Dolly Rupert, 499214; second, O. Harris on Matron Donald, 449302; third, Enochs & Wortman on Homewood Gem, 452496; fourth, Walter L. Yost on Lena Rivers, 650,000; fifth, Smith Farm on Lassie 12th, 512887.

Heifer, Two Years and Under Three—First, Walter L. Yost on Bonnie Doris, 548959; second, Robert W. Hazlett on Yerba Santa, 544948; third, O. Harris on Miss Repeater 75th, 561600; fourth, O. Harris on Majestic Lady, 544377; fifth, Walter L. Yost on Winnie Donald, 707070; sixth, Enochs & Wortman on Homewood Lassie, 546592; seventh, Smith Farm on Hilda Adams 4th, 609958; eighth, Wallace & Good on Peerless Mischief, 624173.

Heifer, Senior Yearling—First, Jesse Engle on Belle Blanchard 61st, 623129; second, Walter L. Yost on Bonnie Madeline 616128; third, Robert W. Hazlett on Bloss 16th, 605513; fourth, Walter L. Yost on Bonnie Easter, 616123; fifth, O. Harris on Miss Perfection 18th, 607149; sixth, Smith Farm on Ethel Perfect, 660076; seventh, Robert W. Hazlett on Ozuna, 605522; eighth, Enochs & Wortman on Dunbar Lady, 8th, 621417; ninth, Walter L. Yost on Bonnie Bracell, 616121; tenth, Smith Farm on Vernal 9th, 637461.

DOLLY RUPERT
Grand Champion Hereford Cow at the 1918 Iowa State Fair. Owned by Enochs & Wortman, Jackson, Miss.

Heifer, Junior Yearling—First, Walter L. Yost on Bonnie Augusta, 616116; second, Walter L. Yost on Lady Aster, 677010; third, Jesse Engle on Belle Blanchard 49th, 63528; fourth, O. Harris on Miss Repeater 109th, 618918; fifth, Enochs & Wortman on Magnolia Lass 5th, 625505; sixth, Robert W. Hazlett on Chetah, 634528; seventh, Wallace & Good on Lady Donald 4th, 635044; eighth, O. Harris on Miss Repeater 112th, 618921; ninth, E. M. Cassady on Lily Stanway, 699128; tenth, Wallace & Good on Lady Donald 1st, 635041.

Heifer, Senior Calf—First, O. Harris on Miss Repeater, 141st, 690635; second, Jesse Engle on Belle Blanchard 63rd, 685477; third, Walter L. Yost on Bonnie Gondola, 694184; fourth, Robert W. Hazlett on Buleen 3rd, 685520; fifth, Enochs & Wortman on Magnolia Lass 7th, 692126; sixth, Robert W. Hazlett on Bloss 20th, 685012; seventh, Robert W. Hazlett on Bloss 21st, 685013; eighth, Enochs & Wortman on Magnolia Lass 8th, 692127; ninth, E. M. Cassady on Bright Miss, 662485; tenth, E. M. Cassady on Donna Stanway, 662491.

Heifer, Junior Calf—First, Walter L. Yost on Donna Woodford 5th, 694193; second, Samuel G. Turner on Laurel Jessamine, 702064; third, Smith Farm on Nettie, 717718; fourth, Robert W. Hazlett on Bocaldo Beauty, 720837; fifth, O. Harris on Miss Repeater 153rd, 700816; sixth, Jesse Engle on Belle Blanchard 73rd; seventh, E. M. Cassady on Miss Stanway, 700123; eighth, Smith Farm on Lady Donald, 717717.

Champion Bull Two Years Old or Over—O. Harris on Repeater Junior, 696352.

Champion Bull Under Two Years Old—Robert W. Hazlett on Bocaldo 11th, 634518.

Champion Cow Two Years Old or Over—Enochs & Wortman on Dolly Rupert, 499214.

Champion Heifer Under Two Years Old—Walter L. Yost on Bonnie Augusta, 616116.

Grand Champion Bull, Any Age—O. Harris on Repeater, Jr., 696352.

Grand Champion Cow or Heifer, Any Age—Enochs & Wortman on Dolly Rupert, 499214.

Graded Herd—First, Walter L. Yost; second, O. Harris; third, Enochs & Wortman; fourth, Smith Farm.

Breeders Young Herd—First, Walter L. Yost; second, Robert W. Hazlett; third, O. Harris; fourth, Jesse Engle; fifth, Enochs & Wortman; sixth, E. M. Cassady; seventh, Smith Farm.

Breeder's Calf Herd—First, O. Harris; second, Robert W. Hazlett; third, Walter L. Yost; fourth, Jesse Engle; fifth, Enochs & Wortman; sixth, E. M. Cassady; seventh, Samuel G. Turner; eighth, Smith Farm.

Get of Sire—First, Walter L. Yost; second, O. Harris; third, Enochs & Wortman; fourth, Jesse Engle & Sons; fifth, Samuel G. Turner; sixth, E. M. Cassady; seventh, Wallace & Good; eighth, E. M. Cassady.

Produce of Cow—First, O. Harris; second, Walter L. Yost; third, Robert W. Hazlett; fourth, O. Harris; fifth, Enochs & Wortman; sixth, Jesse Engle; seventh, Samuel G. Turner; eighth, E. M. Cassady.

IOWA HEREFORD SPECIALS.

Bull, Three Years or Over—First, E. M. Cassady, on Golden Lad, 381477; second, M. W. Beatty, on Sir Simoon 49th, 453924.

Bull, Junior Yearling—First, E. M. Cassady, on Gold Nugget, 609202; second, E. M. Cassady, on Bright Lawrence, 662482.

Bull, Senior Calf—First, E. M. Cassady, on Matchless Stanway, 700122; second, E. M. Cassady, on Bright Boy, 662475.

Bull, Junior Calf—First, E. M. Cassady, on Bright Stanway 2nd, 700111; second, E. M. Cassady, on Sir Stanway, 700125; third, E. M. Cassady, on Bright Edward, 700104.

Heifer, Junior Yearling—First, E. M. Cassady, on Lily Stanway, 699128; second, E. M. Cassady, on Donna Blanche 3rd, 618390.

Heifer, Senior Calf—First, E. M. Cassady, on Bright Miss, 662485; second, E. M. Cassady, on Tonna Stanway, 662491; third, M. W. Beatty, on Loutta Princeps, 679772; fourth, M. W. Beatty, on Lorena Princeps, 679771; fifth, E. M. Cassady, on Bright Lucile, 662483.

Heifer, Junior Calf—First, E. M. Cassady, on Miss Stanway, 700123.

Breeders' Young Herd—First, E. M. Cassady.

Breeders' Calf Herd—First, E. M. Cassady; second, E. M. Cassady.

Get of Sire—First and second, E. M. Cassady.

Produce of Cow—First, E. M. Cassady.

ABERDEEN ANGUS.

EXHIBITORS—Matt Baker, Mitchellville; C. D. & E. F. Caldwell, Burlington Jct., Missouri; Escher & Ryan, Irwin; John H. Fitch, Lake City; Miles W. Gardner, Hamlin; Sam H. Hill & Son, Christoval, Texas; Hartnell & Lang, Stacyville; Emory H. Lee, Avoca; E. M. Ogden, Nevada; Fred J. Roberts, Atlantic; Carl A. Rosenfeld, Kelley; Wadell & Mills, Breashear, Missouri; John Krambeck, Marne.

JUDGE.................................H. J. HESS, Waterloo, Iowa.

BLACK CAP JR.
Junior Champion Angus Cow at the 1918 Iowa State Fair owned by Fred Roberts, Atlantic, Iowa.

Bull, Three Years or Over—First, John H. Fitch, on Berber, 211859.

Bull, Two Years and Under Three—First, Escher &Ryan, on Enlate, 209477; second, John H. Fitch, on Karo F., 211876; third, W. Miles Gardner, on Brownell's Champion, 231187.

Bull, Senior Yearling—First, Escher & Ryan, on Bar Marshall, 229185; second, John H. Fitch, on Quito K., 228600; third, W. Miles Gardner, on.....

Bull, Junior Yearling—First, Carl A. Rosenfeld, on Faultless Pass, 251056; second, Escher & Ryan, on Black Erwin E., 229852; third, Jno. H. Fitch, on Quorum 2nd, 260067; fourth, E. M. Ogden, on Black Erwin of Nevada, 247281; fifth, W. Miles Gardner, on Brownell Barbarian 4th, 260211.

Bull, Senior Calf—First, Emery H. Lee, on Eston Black Cap, 270356; second, Escher & Ryan, on Espoir Marshall, 261269; third, Hartnell & Lang, on Restrola of Eulaine, 261657; fourth, John Krambeck, on Bevo A. 3rd, 256300; fifth, John H. Fitch, on Berman B., 260083.

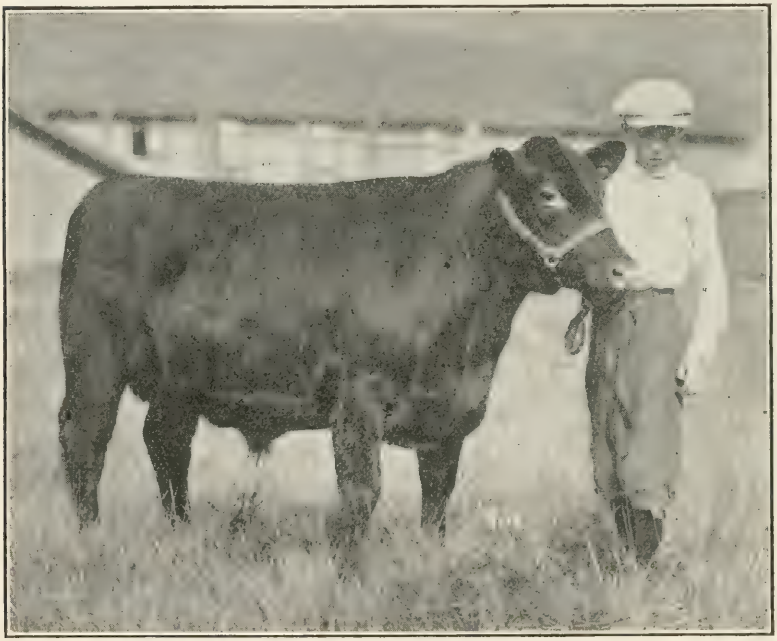
Bull, Junior Calf—First, Escher & Ryan, on E. Pluribus Unum, 254155; second, Carl A. Rosenfeld, on Kenton 2nd, 270460; third, Fred J. Roberts, on

Epistos Again; fourth, Carl A. Rosenfeld, on Eurotas B., 270461; fifth, Fred J. Roberts, on Brave Epistos.

Cow, Three Years or Over—First, Escher & Ryan, on Erica McHenry, 183801; second, Fred J. Roberts, on Hillsdale Pride; third, Hartnell & Lang, on Strady Glen Heather Bloom 2nd, 143163; fourth, John H. Fitch, on Blackbird Bissie M., 205052.

Heifer Two Years and Under Three—First, Escher & Ryan, on Blackbird Gift 13th, 219522; second, Fred J. Roberts, on Blackbird Diana of Woodcote, 207421; third, Fred J. Roberts, on Blackbird of Homedale 37th; fourth, John H. Fitch, on Quetta, 228586; fifth, Hartnell & Lang, on Glen Mary Queen 15th, 227805.

Heifer, Senior Yearling—First, Fred J. Roberts; second, Escher & Ryan, on Enamma 4th, 228045; third, Escher & Ryan, on Barbara McHenry 34th, 229192; fourth, Escher & Ryan, on Blackcap Lassie 13th, 261262; fifth, John H. Fitch, on Kasino, 228592; sixth, Fred J. Roberts, on Erica Ellen 25th, 246482; seventh, Escher & Ryan; eighth, John H. Fitch, on Patsy Pride 2nd, 228596.



Charles Ryan of Shelby county and his grade Angus steer that won first prize in the baby beef contest.

Heifer, Junior Yearling—First, Escher & Ryan, on Blackbird Missie 15th, 229881; second, Fred J. Roberts, on Blackbird Roberts 26th, 249694; third, Escher & Ryan, on Pride Perfection, 254131; fourth, Carl C. Rosenfeld, on Blackcap of Rosengift 2nd, 265258; fifth, W. Miles Gardner, on Barbara Brownell; sixth, Fred J. Roberts, on Blackbird Favorite 8th, 247112; seventh, W. Miles Gardner, on Pride of Brownell, 254566; eighth, Hartnell & Lang, on Elizabeth Anne 2nd, 249484.

Heifer, Senior Calf—First, Escher & Ryan, on Pride Protest; second, Carl A. Rosenfeld, on Epic, 265263; third, Escher & Ryan, on Erica Elite, 254143; fourth, John H. Fitch, on Kakana, 260081; fifth, John H. Fitch, on Bluebird F., 260093; sixth, Escher & Ryan, on Erica Marie 2nd, 254149; seventh, Fred

J. Roberts, on Blackbird Roberts 36th; eighth, Carl A. Rosenfeld, on Blackbird Quissy, 265262.

Heifer, Junior Calf—First, Escher & Ryan, on Elberta 337th; second, Escher & Ryan, on Elmona, 261281; third, Fred J. Roberts, on Blackbird Roberts 36th; fourth, Carl A. Rosenfeld, on Blackbird Eurota, 265265; fifth, Carl A. Rosenfeld.

Champion Bull Two Years Old or Over—Escher & Ryan, on Enlate, 209477.

Champion Bull Under Two Years Old—Escher & Ryan, on Bar Marshall, 229185.

Champion Cow Two Years Old or Over—Escher & Ryan, on Erica McHenry 39th, 183801.

Champion Heifer, Under Two Years Old—Fred J. Roberts.

Grand Champion Bull Any Age—Escher & Ryan, on Enlate, 209477.

Grand Champion Cow or Heifer Any Age—Escher & Ryan, on Erica McHenry 39th, 183801.

Graded Herd—First, Escher & Ryan; second, Fred J. Roberts; third, John H. Fitch.

Breeders' Young Herd—First, Escher & Ryan; second, Carl A. Rosenfeld; third, John H. Fitch; fourth, Fred J. Roberts; fifth, Escher & Ryan.

Breeders' Calf Herd—First, Escher & Ryan; second, Carl A. Rosenfeld; third, Escher & Ryan; fourth, Fred J. Roberts; fifth, John H. Fitch.

Get of Sire—First, Escher & Ryan; second, Escher & Ryan; third, Fred J. Roberts; fourth, Carl A. Rosenfeld; fifth, John H. Fitch.

Produce of Cow—First, Escher & Ryan; second, John H. Fitch; third, Escher & Ryan; fourth, John H. Fitch; fifth, John H. Fitch.

POLLED DURHAM.

Exhibitors—Achenbach Bros., Washington, Kansas; Albert Hultine, Saronville, Nebraska; S. W. Stewart & Son, Kennard, Nebraska.

Judge............................W. J. Kennedy, Sioux City, Iowa.

Bull Three Years or Over—First, S. M. Stewart, on Royal Lavender 2nd, 12332.

Bull, Two Years, Under Three—First, Achenbach Bros., on Sunny Sultan, 13857.

Bull, Senior Yearling—First, Achenbach Bros., on Imperial Cumberland, 14543.

Bull, Junior Yearling—First, S. M. Stewart, on Double Lavender, 16265; second, Achenbach Bros., on Sovereign Sultan, 15655; third, S. M. Stewart, on Prince Royal Vol. 8.

Bull, Senior Calf—First, Albert Hultine, on Royal Count, 17588; second, Albert Hultine, on High Marshall, 17590; third, Achenbach Bros., on Modern Sultanna; fourth, C. M. Stewart, on Royal Prince Vol. 8; fifth, Achenbach Bros., on Sultan of the Meadow.

Bull, Junior Calf—First, Albert Hultine, on True Goods, 17591.

Cow Three Years or Over—First, Achenbach Bros., on Sultanna Vol. 6; second, S. M. Stewart, on Aurora Belle Vol. 6.

Heifer, Two Years, Under Three—First, Achenbach Bros., on Fatima Vol. 7; second, S. M. Stewart, on The Princess, 506578.

Heifer, Senior Yearling—First, Albert Hultine ,on Gloster Countess 2nd,795; second, S. M. Stewart, on Belle of C., 2517; third, S. M. Stewart, on Belle of K., 1795; fourth, S. M. Stewart, on Velvet Orange, 1798.

Heifer, Junior Yearling—First, Achenbach Bros., on Florentine, 4151; second, Albert Hultine, on Rosy Sultana, 4110; third, S. M. Stewart, on Winning Pet, 1779.

Heifer, Senior Calf—First, Albert Hultine, on Gloster Princess 41st, 4109; second, Achenbach Bros., on Baroness Sultana 2nd; third, S. M. Stewart, on

Clementine 1st Vol. 8; fourth, Achenbach Bros., on Lady in White, 4153; fifth, S. M. Stewart, on Fatima Vol. 8.

Heifer, Junior Calf—First, Achenbach Bros., on Dolly; second, Albert Hultine, on Gloster Princess 5th, 4108; third, S. M. Stewart, on Orange Lassie Vol. 8.

Champion Bull Two Years Old or Over—S. M. Stewart, on Royal Lavender 2nd, 12332.

Champion Bull, Under Two Years Old—Albert Hultine, on Royal Count, 17588.

Champion Cow Two Years Old or Over—Achenbach Bros., Sultana Vol. 6.

Champion Heifer, Under Two Years Old—Albert Hultine, on Gloster Countess 2nd, 795.

Grand Champion Bull, Any Age—S. M. Stewart, on Royal Lavender 2nd, 12332.

Grand Champion Cow or Heifer, Any Age—Achenbach Bros., on Sultana Vol.——.

Graded Herd—First, Achenbach Bros.; second, S. M. Stewart.

Breeders' Young Herd—First, Albert Hultine; second and third, S. M. Stewart.

Breeders' Calf Herd—First, Albert Hultine; second, Achenbach Bros., third and fourth, S. M. Stewart.

Get of Sire—First, Albert Hultine; second, Achenbach Bros.; third and fourth, S. M. Stewart.

Produce of Cow—First and Fourth, Achenbach Bros.; second, Albert Hultine; third and fifth, S. M. Stewart.

RED POLLED.

EXHIBITORS—Clouss & Travis, Manson; F. W. Foote, Red Wing, Minnesota; W. S. Hill, Alexandria, South Dakota; J. W. Larabee, Earlville, Illinois.

JUDGE.................................E. R. DAVIS, Lincoln, Neb.

Bull Three Years or Over—First, W. S. Hill, on Teddy's Perfection, 24538; second, Clouss & Travis, on Phil 27096.

Bull, Two Years, Under Three—First, W. S. Hill, on Pleasant Hill Perfection, 34632.

Bull, Senior Yearling—First, W. S. Hill, on Paul, 32488; second, Clouss & Travis, on Master, 32551.

Bull, Junior Yearling—First, Clouss & Travis, on Ruben, 30390; second, W. S. Hill, on Malcolm, 33874.

Bull, Senior Calf—First, W. S. Hill, on Bently, 33881; second, W. S. Hill, on Ralph, 33884; third, Clouss & Travis, on Lawrence, 33331; fourth, Clouss & Travis, on Dan, 3334.

Bull, Junior Calf—First, W. S. Hill, on Freeman, 34566; second, Clouss & Travis, on Ruperta's Again.

Cow Three Years or Over—First, W. S. Hill, on Constant, 26672; second, Clouss & Travis, on Rozell, 36378.

Heifer, Two Years, Under Three—First, W. S. Hill, on Brownie, 42764; second, Clouss & Travis, on Myrtel, 43999.

Heifer, Senior Yearling—First, W. S. Hill, on Marcia, 45739; second, W. S. Hill, on Arlene, 4574; third, Clouss & Travis, on Lady Stove 7th, 47137.

Heifer, Junior Yearling—First, W. S. Hill, on Marion, 48602; second, W. S. Hill, on Cecelia, 48601; third, Clouss & Travis, on Dora, 47083; fourth, Clouss & Travis, on Ruth 3rd, 47084.

Heifer, Senior Calf—First, W. S. Hill, on Medina, 48616; second, Clouss & Travis, on Sallie, 47908; third, Clouss & Travis, on Dainty 47909; fourth, W. S. Hill, on Venice, 48615.

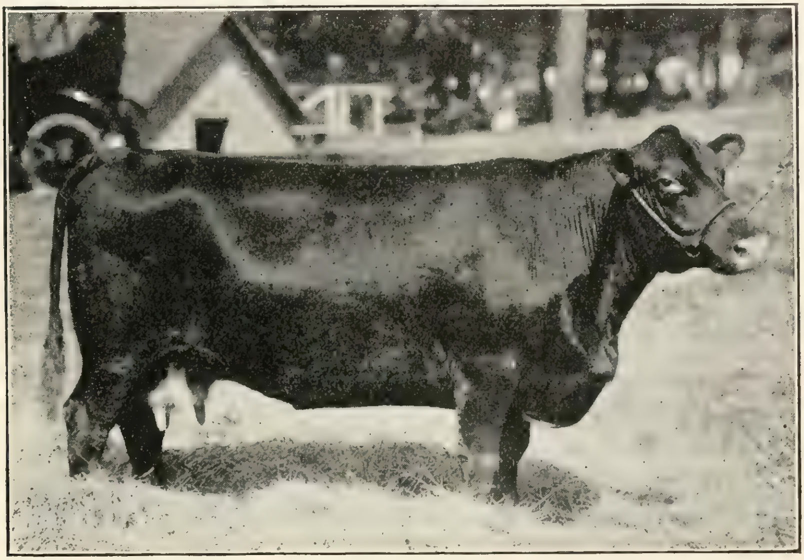
Heifer, Junior Calf—First, Clouss & Travis, on Kate; second, W. S. Hill, on Constance.

Champion Bull, Two Years Old or Over—W. S. Hill, on Pleasant Hill Perfection, 34632.

Champion Bull, Under Two Years Old—Clouss & Travis, on Ruben, 30390.

Champion Cow Two Years Old or Over—W. S. Hill, on Constant, 26672.

Champion Heifer Under Two Years Old—W. S. Hill, on Marion, 48602.



CONSTANT

Grand Champion Red Polled Cow at the 1918 Iowa State Fair. Owned by W. S. Hill, Alexandria, South Dakota.

Grand Champion Bull, Any Age—W. S. Hill, on Pleasant Hill Perfection, 34632.

Grand Champion Cow or Heifer, Any Age—W. S. Hill, on Constant.

Graded Herd—First, W. S. Hill; second, Clouss & Travis.

Breeders' Young Herd—First, W. S. Hill; second, Clouss & Travis.

Breeders' Calf Herd—First, W. S. Hill; second, Clouss & Travis.

Get of Sire—First and second, W. S. Hill; second and fourth, Clouss and Travis.

Produce of Cow—First, Clouss & Travis; second, W. S. Hill.

HOLSTEIN.

EXHIBITORS—Cass Farm Co., Sumner; J. H. Cleverly, Maxwell; Hargrove & Arnold, Norwalk; Henderson & Erickson, Randall.

JUDGE.................................H. H. KILDEE, Ames, Iowa.

Bull, Three Years or Over—First, J. H. Cleverly, on Mechthilde Sir Ormsby Korndyke, 115321; second, Cass Farm Co., on King Aaggie Hengerveld, 180842.

Bull, Two Years, Under Three—First, Cass Farm Co., on Fayne Bessie Homestead, 200017.

Bull, One Year, Under Two—First, J. H. Cleverly, on Sir Pietertje Watson Homestead, 213935; second, Hargrove & Arnold, on King Mutual Josephine, 215256.

Bull, Senior Calf—First, Henderson & Erickson, on Tritomia Pietertje Ormsby, 237603; second, Hargrove & Arnold, on King Mutual Erna, 238556; third, Hargrove & Arnold, on King Mutual Beauty, 235012; fourth, Cass Farm Co., on Aaggie Heng. Bismark De Kol, 242188; fifth, Cass Farm Co., on Aaggie Hengeveld Segis, 242189.

Bull, Junior Calf—First, Hargrove & Arnold; second, Cass Farm Co., on Aaggie Almeda Hengeveld, 242191; third, J. H. Cleverly; fourth, Cass Farm Co., on Aggie Heng. Lilith Walker, 242190; fifth, J. H. Cleverly, on Fairlawn Burke Ormsby, 241512.

Cow Four Years or Over—First, Cass Farm Co., on Almeda Lueske Heng., 195534; second, Hargrove & Arnold, on Josephine Undine Ormsby, 103072; third, Hargrove & Arnold, on Oak Dale Lady Clothilde, 274064; fourth, J. H. Cleverly, on Piebe Colantha Ormsby, 143018.

Cow, Three Years, Under Four—First, Hargrove & Arnold, on Rose De Kol Wayne Butter Boy, 320335; second, Hargrove & Arnold, on Kirby Heng. Iuka De Kol, 275530; third, Cass Farm Co., on Opal Segis Pontiac.

Heifer, Two Years, Under Three—First, Cass Farm Co., on Mercedes Aaltje Johanna, 317353; second, Hargrove & Arnold, on North River Tidy Netherland, 358159; third, J. H. Cleverly, on Gudultje Pietertje Burke, 328647; fourth, Cass Farm Co., on Piebe De Kol Pride Homestead, 361624.

Heifer, Senior Yearling—First, J. H. Cleverly, on Colantha Ormsby Homestead, 386601; second, Cass Farm Co., on Alcartra Pink Johanna, 417368; third, Hargrove & Arnold, on Kirby Martha Girl, 383993; fourth, Cass Farm Co., on Pauline Mechthilde Walker, 440419.

Heifer, Junior Yearling—First, Hargrove & Arnold, on Rose King Mutual Wayne, 385630; second, Cass Farm Co., on Pieterje Fayne Concordia, 432061; third, Hargrove & Arnold, on Rose King Mutual, 375542; fourth, J. H. Cleverly on Miss Piebe Pontiac Korndyke, 384299.

Heifer, Senior Calf—First, J. H. Cleverly, on Fairlawn Ormsby Beauty, 444001; second, Cass Farm Co., on Aaggie Hengveld Carlotta, 445150; third, Hargrove & Arnold, on King Mutual Korndyke Dulcie Jewel, 419723; fourth, Cass Farm Co., on Sadie Fobes Homestead, 445147; fifth, Cass Farm Co., on Aaggie Hengeveld Daisy Homestead, 445153.

Heifer, Junior Calf—First, Cass Farm Co. on Aggie Mona Clothilde, 445756; second, J. H. Cleverly on Fairlawn Ormsby Pontiac, 444003; third, Hargrove & Arnold on Lady Mutual Vale, 436385; fourth, Hargrove & Arnold on Miss Rose Mutual, 432301; fifth, Cass Farm Co. on Aaggie Hengeveld Canary Segis, 445157.

Champion Bull Two Years Old and Over—Cass Farm Co. on Fayne Bessie Homestead, 200017.

Champion Bull Under Two Years Old—J. H. Cleverly on Sir Pietertje Watson Homestead, 213935.

Champion Cow Two Years Old or Over—Cass Farm Co. on Almeda Lueske Hengeveld, 195534.

Champion Heifer Under Two Years Old—Hargrove & Arnold on Rose King Mutual Wayne, 385630.

Grand Champion Bull, Any Age—Cass Farm Co. on Fayne Bessie Homestead, 200017.

Cow or Heifer, Any Age—Cass Farm Co. on Almeda Lueske Hengeveld, 195534.

Graded Herd—First and Third, Cass Farm Co.; second, J. H. Cleverly.

Breeders' Young Herd—First, Cass Farm Co.; second, Hargrove & Arnold.

Breeders' Calf Herd—First, Hargrove & Arnold; second, Cass Farm Co.; third, J. H. Cleverly.

Get of Sire—First and fifth, Cass Farm Co.; second and fourth, Hargrove & Arnold; third, J. H. Cleverly.

Produce of cow—First, third and fourth, Hargrove & Arnold; second and fifth, J. H. Cleverly.

DIPLOMAS.

Premier exhibitor—Cass Farm Co.

Premier Breeder—Hargrove & Arnold.

JERSEY.

Exhibitors—Longview Farm, Lees Summit, Missouri; White City Jersey Farm, Tulsa, Oklahoma.

Judge............................J. B. Fitch, Manhattan, Kansas.

Bull Three Years or Over—First, Longview Farm on Viola's Majesty's White Sox, 122005; second, White City Jersey Farm on Noble's Handsome Prince, 84966; third, Longview Farm on Warder's Chieftan, 141412.

Bull, Two Years Under Three—First, Longview Farm on Poet's White Heart, 144615; second, Long View Farm on Dorariscus Raleigh, 151520.

Bull One Year, Under Two—First, White City Jersey Farm on Tulsa Chief, 163248; second, Longview Farm on Emily's Poet, 154388; third, Longview Farm on Chief Raleigh, 151522.

Bull Senior Calf—First, Longview Farm on Warder's Oxford Chieftain, 164376; second, Longview Farm on Raleigh's Bright Prince, 163966; third, White City Jersey Farm on Guenon's Handsome Prince, 163249.

Bull, Junior Calf—First, Longview Farm; second, Longview Farm on Norma's Perfect Raleigh, 164511; third, White City Jersey Farm, on Eventide's Bell Boy, 163826; fourth, White City Jersey Farm on Pansy's Handsome Prince.

Cow, Four Years or Over—First, Longview Farm on Fairy Glen's Flora, 253707; second, Longview Farm on Oxford's Majesty's Crocus, 290832; third, White City Jersey Farm on Zi Zi of Elmendorff, 280848; fourth, White City Jersey Farm on Oxford's Ganeboge Queene, 303313; fifth, White City Jersey Farm on Fern's Precious Lass.

Cow, Three Years, Under Four—First, Longview Farm on Rower's Benedictine Glory, 415920.

Heifer Two Years, Under Three—First, Longview Farm on Fontaine's Nema, 385406; second, Longview Farm on Raleigh's Star of Peace, 415770; third, Longview Farm on Raleigh's Oxford Thistle, 407305; fourth, White City Jersey Farm on Distinction Princess, 379353; fifth, White City Jersey Farm on You'll Do's Champion's Queen.

Heifer, Senior Yearling—First, Longview Farm on Fairy Feather; second, White City Jersey Farm on Egyptians Fairy, 417301; third, Longview Farm on My Rosary, 387259.

Heifer, Junior Yearling—First, Longview Farm on Raleigh's Oxtivity, 388043; second, Longview Farm on Raleigh's Velvet, 381700; third, White City Jersey Farm on You'll Do's Silverine Rose, 410839; fourth, Longview Farm on Chieftain's Flora, 389619.

Heifer, Senior Calf—First, Longview Farm on Raleigh's Evening Star, 419093; second, Longview Farm on Majesty's Golden Plymouth, 415341; third, Longview Farm on Raleigh's Red Feather, 419094; fourth, White City Jersey Farm on Catherine's Jewel, 416278; fifth, White City Jersey Farm on Majesty's Beautiful Star, 416279.

Heifer, Junior Calf—First, Longview Farm on Raleigh's Fairy Finance, 420108; second, White City Jersey Farm on Rosebud's Isis; third, Longview Farm on Red Flag's Susan, 420394.

Champion Bull Two Years Old or Over—Longview Farm on Viola's Majesty's White Sox, 122005.

Champion Bull Under Two Years Old—Longview Farm on Warder's Oxford Chieftain, 164376.

Champion Cow Two Years Old or Over—Longview Farm on Fairy Glen's Flora, 253707.

Champion Heifer Under Two Years Old—Longview Farm on Raleigh's Oxtivity, 388043.

Grand Champion Bull, Any Age—Longview Farm on Viola's Majesty's White Sox, 122005.

Grand Champion Cow or Heifer, Any Age—Longview Farm on Fairy Glen's Flora, 253707.

Graded Herd—First, second and fourth, Longview Farm; third, White City Jersey Farm.

Breeders' Young Herd—First and third, Longview Farm; second, White City Jersey Farm.

Breeders' Calf Herd—First Longview Farm; second, White City Jersey Farm.

Get of Sire—First, second and third, Longview Farm; fourth, White City Jersey Farm.

Produce of Cow—First, second, third, fourth and fifth, Longview Farm.

Premier Exhibitor—Longview Farm.

Premier Breeder—Longview Farm.

SPECIAL PRIZES OFFERED BY THE AMERICAN JERSEY CATTLE CLUB

Cow Having a Register of merit Record for One Year—First, Longview Farm on Fairy Glenn's Flora, 253707; second, Longview Farm on Oxford Majesty's Crocus, 290832.

Cow Having a Register of Merit Record for One Year Shown With Two of her Progeny—First, Longview Farm on Fairy Glenn's Flora, 253707.

Get of Sire—First, Longview Farm.

Breeders' Young Herd—First, Longview Farm.

Exhibitor's Herd—First, Longview Farm.

Produce of One Cow—First, Longview Farm.

Grand Champion Bull—Longview Farm on Viola's Majesty White Sox, 122005.

Grand Champion Female—Longview Farm on Fairy Glenn's Flora, 253707.

GUERNSEYS.

EXHIBITORS—F. M. Brick, Waukee; Dairyland Farm, Storm Lake; Island Farm, Floodwood, Minnesota; W. W. Marsh, Waterloo; Mountain Bros., Des Moines; John A. Yoder, Kalona; Rookwood Farm, Ames.

JUDGE........................HUGH G. VANPELT, Waterloo, Iowa.

Bull, Three Years or Over—First, W. W. Marsh on Imp. Kenilworth Gold, 40380; second, Island Farm on Gold Lassie's Julian, 27704; third, Dairyland Farm on Duke's Sheet Anchor, 30363; fourth, Mountain Bros. on Cherub's Winner, 34180.

Bull, Two Years, Under Three—First, Mountain Bros. on Imp. Kitchener's Express, 43925; second, Dairyland Farm on College's Star Dairy Man of Tilly Bardin, 43826.

Bull, One Year Under Two—First, W. W. Marsh on Cherub's Prince, 41543; second, Rookwood Farm on Rookwood Cherub, 46162; third, Island Farm on Maxine of Linda Vista, 42270; fourth, John A. Yoder on Lily's May King 3rd, 41167; fifth, Mountain Bros. on Cherub's Glenwood of Iowanola, 46218.

Bull, Senior Calf—First, W. W. Marsh on Marie's Cherub of the Prairie, 48138; second, W. W. Marsh on Lily Du Preel's Prairie Gold, 48135; third, Mountain Bros. on Cherub's Recollection of Iowanola, 49059; fourth, Dairyland Farm on Handsome Clyde; fifth, Island Farm on Beda's May King of Island, 49140.

Bull, Junior Calf—First, W. W. Marsh on Allysum's Cherub, 50795; second, Dairyland Farm on Marice Fannie Sequel; third, Island Farm on Princess Jewell of Island Farm, 51181.

Cow Four Years or Over—First, Island Farm on Imp. Bella 2nd Du Grands Fort, 36346; second, W. W. Marsh on Felois 4th, 53139; third, Dairyland Farm on Yeksa Margarett, 50702; fourth, Dairyland Farm on Imp. Herival's Bett, 33138; fifth, Mountain Brothers on Martha W. of Alfalfa Farm, 45143.

Cow Three Years, Under Four—First, Dairyland Farm on Bell Princess, 62385.

Heifer, Two Years, Under Three—First, Island Farm on Bella's Golden Lassie, 63199; second, W. W. Marsh on Ingleside Pretoria Vrangue, 68499; third, Mountain Brothers on Pollyanna of Iowanola, 63769; fourth, Island Farm on Bella's Golden Lassie, 63198; fifth, John A. Yoder on Pocatello's Renivette, 67212.

Heifer Senior Yearling—First, W. W. Marsh on Imp. Prospect's Rose des Howards, 69682; second, W. W. Marsh on Felois of the Prairie, 69682; third, Dairyland Farm on Bonny Boy's Beauty Eagle, 67333; fourth, Island Farm on Golden Lassie's Beldane, 69973; fifth, Island Farm on May Rose of Island Farm, 70583.

Heifer Junior Yearling—First, W. W. Marsh on Beau Peep Queen 2nd, 74011; second, W. W. Marsh on Golden Cherry of the Prairie, 72746; third, Mountain Brothers on Golden Queen of Iowanola, 76577; fourth, Dairyland Farm on Flossette of Grayside, 73407; fifth, Mountain Brothers.

Heifer, senior calf—First, Island Farm on May King Beda of Island, 76580; second, Mountain Bros. on Cherub's Lilly of Iowanola, 76580; third, W. W. Marsh on Express of the Prairie, 79613; fourth, Island Farm on Milvia's Beda of Island Farm, 79000; fifth, Island Farm on Beda Maid of Island Farm, 78998.

Heifer, Junior Calf—First, Dairyland Farm on Dairyland Fanny; second, W. W. Marsh on My Fig Tree of the Prairie, 83507; third, W. W. Marsh on Cherry's Good Luck; fourth, W. W. Marsh on Cherub's Grace Darling, 83504; fifth, Mountain Brothers on Imogene of Iowanola.

Champion Bull Two Years Old or Over—W. W. Marsh on Imp. Kennelworth Gold, 40380.

Champion Bull Under Two Years Old—W. W. Marsh on Cherub's Prince, 41543.

Champion Cow Two Years Old or Over—Island Farm on Imp. Bella 2nd Du Grand Fort, 36346.

Champion Heifer Under Two Years Old—W. W. Marsh on Beau Beep Queen 2nd, 74011.

Grand Champion Bull, Any Age—W. W. Marsh on Imp. Kennelworth Gold, 40380.

Grand Champion Cow or Heifer Any Age—Island Farm on Imp. Bella 2nd Du Grand Fort, 36346.

Graded Herd—First, W. W. Marsh; second, Island Farm; third, Mountain Brothers; fourth, Dairyland Farm.

Breeders' Young Herd—First, W. W. Marsh; second, Island Farm; third, Mountain Brothers.

Breeders' Calf Herd—First, W. W. Marsh; second, Mountain Brothers; third, Island Farm; fourth, Dairyland Farm.

Get of Sire—First, W. W. Marsh; second, Island Farm; third, Mountain Brothers; fourth, Island Farm; fifth, Dairyland Farm.

Produce of Cow—First, Island Farm; second, W. W. Marsh; third, Mountain Brothers; fourth, Dairyland Farm.

Premier Exhibitor—W. W. Marsh.

Premier Breeder—W. W. Marsh.

AYRSHIRE.

EXHIBITORS—C. C. H. Peverill, Waterloo, Iowa.

JUDGE.................................J. G. WATSON, Brandon, Vt.

Bull Three Years or Over—First, C. H. Peverill on Yankee Doodle, 16313.

Bull One Year, Under Two—First, C. H. Peverill on Enid's Good Gift, 19385.

Bull Senior Calf—First, C. H. Peverill on Ainshurst Champ of Osage.

Bull Junior Calf—First, C. H. Peverill on Rosebud's Pride; second and third, C. H. Peverill.

Cow Four Years or Over—First, C. H. Peverill on Enid's Lessnessock, 40618; second, C. H. Peverill on Lena's Beauty, 40896; third, C. H. Peverill on Lessnessock Carlton, 40624.

Cow Three Years, Under Four—First, C. H. Peverill on Nona Spencer, 39923.

Heifer, Two Years Under Three—First, C. H. Peverill on Good Gift's Nona.

Heifer Junior Yearling—First, C. H. Peverill on Minnie Good Gift, 46636; second, C. H. Peverill on Lora Garland, 48645.

Heifer Senior Calf—First, C. H. Peverill on Bertha Carlton, 52961.

Heifer Junior Calf—First, C. H. Peverill on Enid's Rose, 52962.

Champion Bull Two Years Old or Over—C. H. Peverill on Yankee Doodle, 16313.

Champion Bull Under Two Years Old—C. H. Peverill on Rosebud Pride.

Champion Cow Two Years Old or Over—C. H. Peverill on Enid Lessnessock, 40618.

Champion Heifer Under Two Years Old—C. H. Peverill on Bertha Carlton, 52961.

Grand Champion Bull Any Age—C. H. Peverill on Rosebud's Pride.

Grand Champion Cow or Heifer Any Age—C. H. Peverill on Enid's Lessnessock, 40618.

Graded Herd—First, C. H. Peverill.

Breeders' Young Herd—First, C. H Peverill

Get of Sire—First, C H Peverill

Produce of Cow—First and second, C. H. Peverill.

Premier Exhibitor—O. H.Peverill.

Premier Breeder—C. H. Peverill.

FAT SHORTHORNS.

PURE BRED.

Steer, Spayed or Martin Heifer One Year and Under Two—First, Josephine Garden on Iowa's Venus; second, Glenn Windom on Racilla's Pride, 676397; third, Arthur and Walter Henderson on Jerry.

Steer, Spayed or Martin Heifer Under One Year—First, Clifford Tague on Bonnie Brae; second, Harold Lobaugh on Woodrow.

Champion Steer, Spayed or Martin Heifer—Josephine Garden on Iowa's Venus.

GRADE.

Steer, Spayed or Martin Heifer One Year and Under Two—First, Chas. Warren; second, Glenn Windom on Roan Knight; third, Reuben Redman on Bill.

Champion Steer, Spayed or Martin Heifer—Chas. Warren.

FAT HEREFORDS.

PURE BRED.

Steer, Spayed or Mart'n Heifer Two Years and Under Three—First, E. M. Cassady on Ridge Boy, 541736.

Steer, Spayed or Martin Heifer One Year Under Two—First, E. M. Cassady on Donna's Lad; second, Harold Masterson on Pride Lad; third, Tom Evans on Liberty Lad, 199.

Steer, Spayed or Martin Heifer Under One Year—E. M. Cassady on Mabel's Lad.

Champion Steer, Spayed or Martin Heifer—E. M. Cassady on Donna's Lad.

Group of Three Head—E. M. Cassady.

GRADE OR CROSS BRED.

Steer, Spayed or Martin Heifer Two Years and Under Three—E. M. Cassady & Son on Donald.

Steer, Spayed or Martin Heifer One Year, Under Two—First, E. M. Cassady on Bobbie; second, William Kelley on Baby Jimmie; third, Roy Longfellow on Buster; fourth, Clarence Bowman on Franklin.

Steer, Spayed or Martin Heifer Under One Year—First, E. M. Cassady on Ridge Boy 3rd.

Champion Steer Spayed or Martin Heifer—E. M. Cassady on Bobbie.

Group of Three Head—First, E. M. Cassady.

FAT ABERDEEN ANGUS.

PURE BRED.

Steer, Spayed or Martin Heifer One Year and Under Two—First, Geo. Rosenfeld on His Highness; second, Richard Seiberling on Elmland Hero; third, Ward Griffin.

Champion Steer Spayed or Martin Heifer, Geo. Rosenfeld.

GRADE OR CROSS BRED.

Steer spayed or Martin Heifer One Year and Under Two—First, Chas. Ryan; second, Carl Rosenfeld on Royal Heir; third, Horace Stoner on Dale of E. V.

Steer, Spayed or Martin Heifer Under One Year—First, Carl Rosenfeld on Black Monarch.

Champion Steer Spayed or Martin Heifer—Chas. T. Ryan.

PURE BREDS, GRADES AND CROSS BREDS.

Steer, Spayed or Martin Heifer One Year and Under Two—First, Watson Davis on Tommy; second, Watson Davis on Teddy; third, Harold Scott on Pete.

Champion Steer, Spayed or Martin Heifer—Watson Davis on Tommy.

IOWA BOYS' BABY BEEF CONTEST.

Best Fat Steer or Heifer, Any Breed, Pure Bred, Grade or Cross Bred—First, Chas. T. Ryan; second, Josephine Garden; third, Charles Warren; fourth, Geo. Rosenfeld; fifth, Richard Seiberling; sixth, William Kelley; seventh, Horace Stoner; eighth, Watson Davis; ninth, Roy Longfellow; tenth, Glenn Window; eleventh, Harold Masterson; twelfth, Adolph C. Rang; thirteenth, Dale Porter; fourteenth, Surrel Barton; fifteenth, Donald Geddes; sixteenth, Paul Porter; seventeenth, Tom Evans; eighteenth, Watson Davis; nineteenth, Clifford Tague; twentieth, Glenn Window; twenty-first, Harold Lobaugh; twenty-second, Harvey Jensen; twenty-third, Paul O. Walton twenty-fourth, Albert Kemper; twenty-fifth, Clarence Bowman;

twenty-sixth, Earl Yeager; twenty-seventh, Ward Griffin; twenty- eighth, Reuben Redman; twenty-ninth, Forest Fender; thirtieth, Kenneth Wilkinson; thirty-first, Carl Meyers; thirty-second, Arthur and Walter Henderson; thirty-third, Earl R. Buckland.

BOYS' JUDGING CONTEST.

Rank	Total Points	Name
1	699	Rex Bull, Ottumwa.
2	692	Harold White, Rhodes.
3	682	Stanley Rogers, Troy.
4	679	Roger Wilkinson, Mason City.
5	678	Vernon C. Peters, Andover.
6	671	Morris Butler, Marshalltown.
7	660	Geo. Rosenfeld, Kelley.
8	657	Louis Puck, Stockton.
9	653	Harold W. Brown, Woodbine.
10	652	Henry Yeager, Woodbine.

MEMBERS OF 1918 BOYS' CAMP

SWINE DEPARTMENT

POLAND CHINA.

SUPERINTENDENT.....................CYRUS A. TOW, Norway, Iowa.

EXHIBITORS—Lewis M. Andrew, Grand River; Anderson Bros., West Liberty; J. L. Armstrong, Zearing; R. R. Blake, Dallas Center; A. J. Banks, Montour; C. H. Christianson, Story City; I. J. Conrad, Melbourne; G. C. Cox, Lakonta; W. E. Conrad, Melbourne; Fred Dalle, Mission Hall, South Dakota; M. A. Dowling, Valley Junction; Homer Duea, Zearing; W. W. Davisson, Wellman; S. L. Farlow, Ankeny; Nels C. Jensen, Exira; Guy V. Jincks, Ross; W. D. Jones, Atkins; Korner Bros., Alton Joe Kramer, Elkader; Wm. Lentz, Ankeny; A. J. Lyttle & Son, Oskaloosa; Chas. E. Lyden, Manning; O. R. Mark, Adel; Ernest Melberg, Norway; Raymond G. Milke, Peosta; H. M. Meneough, Grimes; Moore Farms, Gardner, Kansas; G. F. Marshall & Son, Monroe; F. G. Paul, Marshalltown; C. W. Phillips, New Sharon; C. M. Pederson, Dunlap; O. E. Perry, Gilman; Fred G. Reis, Indianola; Logan Pendleson, Reasnor; George Ruby, Lacey; Fred Sievers, Audubon; S. J. Sherman, Humboldt; Mark P. Shaw, Monroe; Joe Schneider, Remsen; A. D. Severe, Dows; H. A. Tessman, Ross; John Waldron, Elgin; Willard W. Watters, Iowa City; Williams Bros., Villisca; R. W. Halford, Manning; John Blauer, Tingley.

JUDGE.............................W. L. MCNUTT, Ord, Nebraska.

Aged Boar—First, Fred Sievers on Col. Jack, 288991; second, W. D. Jones on Gristdale Jones 2nd, 260129; third, Korver Bros., on Korver's Orange Wonder, 245891; fourth, G. C. Cox on Defender's Pride, 242453; fifth, Willard W. Watters, W'Black Big Bone, 287313; sixth, W. W. Davisson on Knox All, 306347; seventh, M. A. Dowling on Smooth Orange, 230167.

Senior Yearling Boar—First, R. W. Halford on Big Improver, 292067; second, C. H. Christianson on Iowa King Cole; third, M. A. Dowling on Smooth Prospect, 304389; fourth, Joe Kramer on Wonderful Superior 2nd, 279629; fifth, Nels C. Jensen on Model Chief, 296227.

Junior Yearling Boar—First, Nels C. Jensen on Jensen's Chief, 283973; second, C. M. Pederson on Giant Masterpiece, 295395; third, Raymond G. Miehe on Jumbo's Very Best, 311951; fourth, Anderson Bros. on Iowa Standard; fifth, C. W. Phillips on Smooth Jumbo, 296711; sixth, Joe Kramer on Kramer's Black King, 30777; seventh, Lewis M. Andrew on Andrew's Big Bob, 291059.

Senior Boar Pig—First, A. D. Severe on The Rival; second, R. W. Halford on Captain Bob, 311085; third, Fred Dralle on Over the Top, 312753; fourth, A. D. Severe on Liberty Lad, 311639; fifth, W. E. Conrad on Iowa Wonder, 311205; sixth, S. L. Farlow on Wonder, 311587; seventh, E. M. Meneough on M's Orange Lad, 312565.

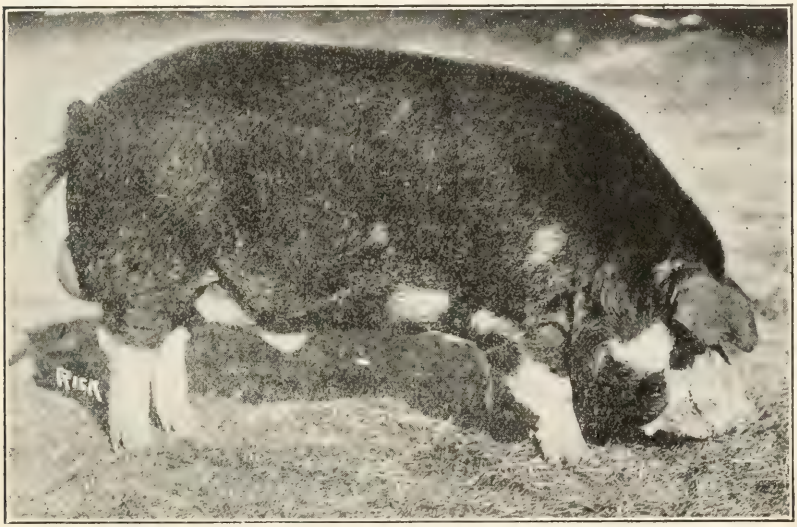
Junior Boar Pig—First, I. J. Conrad; second, H. A. Tessman on Big Bone 2nd; third, Willard W. Watters on Model Bob, 312351; fourth, Joe Kramer; fifth, W. E. Conrad on Blue Valley Defender, 311201; sixth, I. J. Conrad; seventh, Willard W. Watters on Major Bob, 309595.

Aged Sow—First, Fred Sievers on Long Lady Wonder, 646062; second, Chas. E. Lyden on Lady Mastodon A., 199146; third, Chas. E. Lyden on Josephine 1st, 191278; fourth, John Schmieder on Grant Lady, 637912; fifth, H. M. Meneough on Lady Profit, 672552; sixth, S. L. Farlow on Giantess Maid, 589770; seventh, Nels C. Jensen on Model, 659562.

Senior Yearling Sow—First, M. A. Dowling on Dollie Orange, 699422; second, C. H. Christianson on Jumbo's Lass, 719672; third, C. W. Phillips on Quality Maid, 719994; fourth, C. W. Phillips on Smooth Lady Defender, 719992; fifth, H. M. Meneough on M's Pride, 710678; sixth, Nels C. Jensen on Princess 661706; seventh, H. M. Meneough on Giant's Maid, 710680.

Junior Yearling Sow—First, M. A. Dowling on 1 Miss Orange, 699424; second, A. D. Severe on Miss Big Joe; third, Chas. E. Lyden on Disturber's Giantess A., 219469; fourth, C. H. Christianson on Bob's King Lady, 719668; fifth, C. W. Phillips on Smooth Bess, 720000; sixth, John Schmieder on Orphan Beauty, 716378; seventh, H. M. Meneough on Giantess Maid, 643024.

Senior Sow Pig—First, R. W. Halford on Bob's Giantess, 717484; second, Fred Dralle on Miss Orange Queen, 721056; third, A. D. Severe on Liberty Queen, 718608; fourth, R. W. Halford on Bob's Queen, 717486; fifth, Fred Dralle on Orange Queen, 721058; sixth, Homer Duea on Matchless Lady; seventh, Homer Duea on Miss Orange.



BIG IMPROVER

Grand Champion Poland China Boar at the 1918 Iowa State Fair. Owned by R. W. Halford, Manning.

Junior Sow Pig—First, I. J. Conrad on Orange Miss; second, M. A. Dowling; third, I. J. Conrad on Orange Blossom; fourth, M. A. Dowling; fifth, H. M. Meneough on Gay Lady; sixth, Joe Kramer; seventh, John Schmieder on Model Beauty, 716388.

Senior Champion Boar—R. W. Halford on Big Improver, 292067.

Senior Champion Cow—Fred Sievers on Long Lady Wonder, 646062.

Junior Champion Boar—A. D. Severe on The Rival.

Junior Champion Sow—R. W. Halford on Bob's Giantess, 71348.

Grand Champion Boar, Any Age—R. W. Halford on Big Improver, 292067.

Grand Champion Sow, Any Age—Fred Sievers on Long Lady Wonder, 646062.

Aged Herd Owned by Exhibitor—First, Chas. E. Lyden; second, Nels C. Jensen; third, C. H. Christiansen; fourth, C. W. Phillips.

Aged Herd Owned and Bred by Exhibitor—First, Nels C. Jensen; second, C. W. Phillips.

Young Herd Owned by Exhibitor—First, I. J. Conrad; second, A. D. Severe; third, Fred Dralle; fourth, Homer Duea; fifth, A. D. Severe; sixth, H. M. Meneough; seventh, Joe Kramer.

Young Herrd Owned and Bred by Exhibitor—First, I. J. Conrad; second, A. D. Severe; third, A. D. Severe; fourth, H. M. Meneough; fifth, Joe Kramer.

Get of Sire—First, I. J. Conrad; second, R. W. Halford; third, A D. Severe; fourth, H. M. Meneough; fifth, Nels C. Jensen; sixth, A. D. Severe; seventh, I. J. Conrad.

Produce of Dam—First, R. W. Halford; second, I. J. Conrad; third, I. J. Conrad; fourth, Fred Dralle; fifth, Homer Duea; sixth, A. D. Severe; seventh, H. M. Meneough.

POLAND CHINA FUTURITY.

Senior Boar Pigs—First, R. W. Halford on Captain Bob, 311085; second, A. D. Severe on Liberty Lad, 311639; third, W. E. Conrad on Iowa Wonder, 311205; fourth, S. L. Farlow on Wonder, 311587; fifth, E. M. Meneough on M's Orange Lad, 312565; sixth, A. D. Severe on Liberty Timm, 311641.

Senior Sow Pigs—First, R. W. Halford on Bob's Giantess, 717484; second, A. D. Severe on Liberty Queen, 718608; third, R. W. Halford on Bob's Queen, 717486; fourth, H. M. Meneough on M's Lady, 720640; fifth, S. L. Farlow on Queen's Maid 1st, 718542; sixth, W. E. Conrad on Matchless Wonder, 717720.

Junior Boar Pigs—First, I. J. Conrad on Big Mel, 311939; second, W. W. Watters on Model Bob, 312351; third, Joe Kramer on Kramer's Banner; fourth, W. E. Conrad on Blue Valley's Defender, 311201; fifth, I. J. Conrad on Model Orange, 311945; sixth, W. W. Watters on Major Bob, 309595; seventh, G. C. Cox on Halvor Boy, 310239.

Junior Sow Pigs—First, I. J. Conrad on Orange Miss, 719328; second, M. A. Dowling on Lady Prospect, 719012; third, I. J. Conrad on Orange Blossom, 719324; fourth, M. A. Dowling on Lady Prospect 2nd, 719014; fifth, H. M. Meneough on Gay Lady, 720642; sixth, Joe Kramer on Lady Superior, 718414; seventh, John Schmieder on Long Girl, 716384; eighth, Fred G. Reis on Queen Ann, 718260.

Junior Litter of Four—First, I. J. Conrad; second, M. A. Dowling; third, I. J. Conrad; fourth, Joe Kramer; fifth, W. W. Watters; sixth, John Schmieder; seventh, H. M. Meneough; eighth, John Schmieder.

SPOTTED POLAND CHINA.

EXHIBITORS—Jones and Martens, Menlo; J. C. McClune, Keswick; Shaver & Fry, Kalona; E. R. McKeefer & Sons, Ossian, Indiana.

JUDGE..........................CHAS. A. MARKER, Auburn, Illinois.

Aged Boar—First, Shaver & Fry on Duke of England, 1559; second, J. C. McClune on McClune's Choice.

Senior Yearling Boar—First, Shaver & Fry on Shaver's Choice, 8782; second, Shaver & Fry on O. K. Victor, 6821.

Junior Yearling Boar—First, J. C. McClune on Tom King.

Senior Boar Pig—First, Shaver & Fry on Spotted King; second, E. R. McKeefe on Brookside Chief, 10365; third, M. C. McClune on Count M.; fourth, M. C. McClune on Bell Boy.

Junior Boar Pig—First, J. C. McClune; second, Jones & Martens on Liberty Bond; third, Shaver & Fry.

Aged Sow—First, Shaver & Fry on Sonney Spot, 8906; second, J. C. McClune on Big Bell; third, J. C. McClune on Miss Lottie; fourth, Shaver & Fry on Main 2nd, 16544.

Senior Yearling Sow—First, Shaver & Fry on O'Bene 32nd, 15740; second, J. C. McClune on Rose H. 3rd; third, Shaver & Fry on Keepsake 1st, 13554.

Junior Yearling Sow—First, Shaver & Fry on Banker's Lady, 16492; second, J. C. McClune on Rose H. 1st; third, J. C. McClune on Massa 3rd; fourth, Shaver & Fry on American Bell.

Senior Sow Pig—First, J. C. McClune; second and third, Shaver & Fry.

Junior Sow Pig—First and fourth, J. C. McClune; second and third, Shaver & Fry.

Senior Champion Boar—Shaver & Fry on Duke of England.

Senior Champion Sow—Shaver & Fry on Sunny Spot.

Junior Champion Boar—Shaver & Fry on Spotted King.

Junior Champion Sow—J. C. McClune.

Grand Champion Boar, Any Age—Shaver & Fry on Duke of England.

Grand Champion Sow, Any Age—Shaver & Fry on Sunny Spot.

Aged Herd Owned by Exhibitor—First and third, Shaver & Fry; second and fourth, J. C. McClune.

Aged Herd Owned and Bred by Exhibitor—J. C. McClune.

Young Herd Owned by Exhibitor—First and third, Shaver & Fry; second, J. C. McClune.

Young Herd Owned and Bred by Exhibitor—First and third, Shaver & Fry; second, J. C. McClune.

Get of Sire—First and third, Shaver & Fry; second, J. C. McClune.

Produce of Dam—First and third, Shaver & Fry; second, J. C. McClune.

DUROC JERSEY.

EXHIBITORS—A. P. Alsin, Boone; T. E. Abbott, Menlo; Brookwater Farm, Ann Arbor, Mich.; Brastad, Grundy Center; Frank Ballard, North English; Fred Bonnesen, Kimballton; D. F. Bloomfield, West Union; F. L. Crow, Hutchinson, Kansas; J. W. Cartwright, Burlington; Chas. S. Crawford, Indianola; M. C. Cramer, Monroe; J. J. Cain, Skyberg, Minn.; W. H. Duffer & Sons, Brooklyn; John Fennema, Monroe; E. L. Hollingsworth & Son, West Branch; Jas. L. Harper & Son, Ames; E. J. Hawker, West Liberty; W. A. Hooper, Runnells; C. C. Harris, Ankeny; C. B. Jarnagan, Monroe; Dr. J. P. Jorgenson, Elkhorn; John Krebs, Riverside; S. C. Kellogg, Montour; W. A. Kellogg, Montour; J. H. Latta, Birmingham; J. M. Lane, Knoxville; Lynn, Grant & Son, Spirit Lake; H. A. McCaffree, Janesville; R. G. McDuff, Monroe; McClelland Bros., Bondurant; Ray McMillan, Atlantic; G. W. Mundorf, Griswold; Miner Bros., Garner; Arthur E. Mallory, Hampton; D. Nauman & Son, West Liberty; Peterson Bros., Story City; R. B. Reynolds, Guthrie Center; Shepard & Frecco, Muscatine; R. F. Snylie, Columbus Junction; S. W. Swanson, Stanton; M. Spencer, Audubon; W. B. Shaw, Monroe; J. D. Waltmeyer & Son, Melbourne; Grant White, Afton; J. R. Walker, Waterloo; R. J. Worthington, Cumberland; C. R. Zellmer, Atlantic; Williams Bros., Redfield; R. W. Murphy, Dearborn, Mo.; D. J. Brasted, Grundy Center; J. G. Holmes & Sons, Muscatine; F. B. Butterfield, Ankeny; H. S. Fain, Emmetsburg.

JUDGE............................CHAS. A. MARKER, Auburn, Illinois.

Aged Boar—First, M. Spencer on Jack Orion, 219017; second, C. A. Zellmer on Future Fame 2nd, 188963; third, W. H. Duffus & Son on Great Wonder Again, 222457; fourth, W. B. Shaw on Miller Boy, 202571; fifth, J. D. Waltemeyer & Son on Top Pathfinder, 214455; sixth, Williams Brothers on Model Tax Payer 2nd, 193891; seventh, R. F. Smylie on King Burke, 214809.

Senior Yearling Boar—First, R. D. Reynolds on Pathfinder Likeness, 220343; second, H. S. Fain on Joe's King Orion, 98999; third, J. R. Walker on Golden Victor, 262135; fourth, R. F. Smylie on Perfect Model, 239213; fifth, M. C. Cramer on Jumbo Wonder, 261397; sixth, T. E. Abbott on Grand Model Again, 226555; seventh, J. W. Cartwright on Chief Disturber 3rd, 96565-a.

Junior Yearling Boar—First, J. D. Waltemeyer & Son on Big Bone Wonder, 260627; second, E. L. Hollingsworth on Iowa's Champion, 257499; third, M. Spencer on Wonder Colonel, 246865; fourth, D. Nauman & Son on Orion, Jr., 262567; fifth, J. R. Walker on Model Prince, 262133; sixth, Dr. J. P. Jorgensen on Grand Model's Choice, 229351; seventh, R. J. Worthington on Grand Model's Pathfinder, 262301.

Senior Boar Pig—First, J. D. Waltemeyer & Son on Giant Supreme, 259791; second and third, H. S. Fain on H. S. Reformer and Reformer's Best; fourth, J. R. Walker on Royal Lano, Jr., 262137; fifth, W. H. Duffus & Son on Great Wonder Sensation, 262501; sixth, D. Nauman & Son on Orion Boy, 262555; seventh, G. W. Mundorf on Big Model, 258637.

Junior Boar Pig—First, J. R. Walker on Sensation Orion, 262131; second and third, J. D. Waltemeyer & Son; fourth, D. Nauman & Son; fifth and sixth, M. Spencer; seventh, J. H. Latta on Ahab, 261533.

Aged Sow—First, J. D. Waltemeyer on Grand Lady 65th, 567776; second, J. D. Waltemeyer on Grand Lady 70th, 567786; third, Dr. J. P. Jorgensen on Jack Countess, 496190; fourth, Williams Brothers on Volunteer Sunbeam, 486652; fifth, E. L. Hollingsworth on Defender's Girl, 362302; sixth, Grant Lynn & Son on Cherry Model, 564370; seventh, Frank Ballard on Miss Proud Colonel 4th, 506570.

Senior Yearling Sow—First, J. D. Waltemeyer on Grand Lady 74th, 675524; second, Dr. J. P. Jorgensen on Pathfinder; third, H. S. Fain on Cherry Lady, 669918; fourth, J. W. Cartwright on Miss Reprover, 215414-n; fifth, Frank Ballard on Miss Colonel Defender, 663342; sixth, J. W. Cartwright on Orion Duchess 4th, 246456-n; seventh, Williams Brothers on Tax Payer's Favorite, 658532.

Junior Yearling Sow—First, J. D. Waltemeyer on Great Wonder Lady 15th, 659384; second, J. D. Waltemeyer on Great Wonder Lady 16th, 659386; third, H. S. Fain on Golden Lady; fourth, J. H. Latta on Belle of Bon Ton, 575482; fifth, Williams Brothers on Taypayer's Jane, 658530; sixth, Dr. J. P. Jorgensen on Orion's Queen, 611952; seventh, Dr. J. P. Jorgensen on Model Countess 1st, 576182.

Senior Sow Pig—First, Dr. J. P. Jorgensen on Pathfinder's Princess; second, Miner Brothers on Gilt Litter; third, C. A. Zellmer on Charlie's Pride; fourth, J. W. Cartwright on Disturber's Queen, 662396-n; fifth, J. D. Waltemeyer on Great Wonder Lady 17th, 659364; sixth, J. D. Waltemeyer on Great Wonder Lady 18th, 659366; seventh, G. W. Mundorf on Critic's Model first, 653184.

Junior Sow Pig—First and second, J. D. Waltemeyer; third and sixth, M. Spencer; fourth, J. R. Walker on Sensation Orion Lady, 663910; fifth, H. S. Fain; seventh, J. R. Walker on Sensation Orion, 663194.

Senior Champion Boar—R. B. Reynolds on Pathfinder Likeness, 226555.

Senior Champion Sow—J. D. Waltemeyer on Grand Lady 65th, 567776.

Junior Champion Boar—J. D. Waltemeyer on Giant Supreme, 259971.

Junior Champion Sow—J. P. Jorgensen on Pathfinder Princess.

Grand Champion Boar, Any Age—R. B. Reynolds on Pathfinder Likeness, 226555.

Grand Champion Sow, Any Age—J. D. Waltemeyer on Grand Lady 65th, 567776.

Aged Herd, Owned by Exhibitor—First and second, J. D. Waltemeyer; third, Dr. J. P. Jorgensen; fourth, H. S. Fain; fifth, Williams Brothers; sixth, J. H. Latta; seventh, J. W. Cartwright.

Aged Herd, Owned and Bred by Exhibitor—First, J. D. Waltemeyer; second, Dr. J. P. Jorgensen; third, J. H. Latta.

Young Herd Owned by Exhibitor—First and second, J. D. Waltemeyer; third, J. R. Walker; fourth, D. Nauman; fifth, Dr. J. P. Jorgensen; sixth, G. W. Mundorf; seventh, J. H. Latta.

Young Herd Owned and Bred by Exhibitor—First and third, J. D. Waltemeyer & Son; second, J. R. Walker; fourth, D. Nauman; fifth, Dr. J. P. Jorgensen; sixth, G. W. Mundorf; seventh, J. H. Latta.

Get of Sire—First and second, J. D. Waltemeyer; third, J. R. Walker; fourth, M. Spencer; fifth, J. H. Latta; sixth, D. Nauman; seventh, Dr. J. P. Jorgensen.

Produce of Dam—First and fourth, J. D. Waltemeyer; second, J. R. Walker; third, M. Spencer; fifth, Dr. J. P. Jorgensen; sixth, G. W. Mundorf; seventh, J. W. Cartwright.

DUROC JERSEY FUTURITY.

SPRING PIGS.

Boars—First, J. R. Walker, on Sensation Orion, 262131; second, J. D. Waltemeyer, on Giant Supreme 1st, 262255; third, J D. Waltemeyer, on Giant Supreme 2nd, 262257; fourth, D. Nauman, on Orion Lad, 262559; fifth, J. H. Latta, on Ahab, 261533; sixth, J. H. Latta, on Nemo, 261529; seventh, M. C. Cramer, on Bill Illustrator, 261399; eighth, D. Nauman, on Orion Lad 2nd, 265559.

Sows—First, J. D. Waltemeyer, on Giant Lady, 663444; second, J. D. Waltemeyer, on Dora Wonder, 663438; third, J. R. Walker, on Sensation Orion Lady, 663190; fourth, J. R. Walker, on Sensation Orion Queen, 663192; fifth, J. D. Waltemeyer, on Giant Lady 1st, 663446; sixth, J. R. Walker, on Sensation Orion Irene, 663194; seventh, J. D. Waltemeyer, on Giant Lady 2nd, 663448; eighth, Dr. J. P. Jorgensen, on Model Countess.

Litters of Four—First and third, J. D. Waltemeyer; second, J. R. Walker; fourth, J. H. Latta; fifth, Dr. J. P. Jorgensen; sixth, D. F. Bloomfield; seventh, J. W. Cartwright; eighth, D. Nauman & Son.

SPECIAL PRIZES OFFERED BY THE AMERICAN DUROC JERSEY SWINE BREEDERS' ASSOCIATION.

Young Herd—(Iowa Special) First and third, J. D. Waltemeyer; second, J. R. Walker.

Aged Herd—(Open Class)—First, J. D. Waltemeyer; second, Dr. J. P. Jorgensen.

Young Herd—(Open Class)—First, J. D. Waltemeyer; second, J. R. Walker.

CHESTER WHITE.

Exhibitors—Alden Anderson, Story City; John Branchle, Fort Dodge; R. M. Boyer & Son, Farmington; Ora J. Brouhard, Colo; A. D. Brenneman, Marion; Jno. P. Coulson, Storm Lake; Reed Crawford, Libertyville; A. E. Dennis, Killduff; F. G. Dickerson, Knoxville; W. H. Dunbar, Jefferson; Joe W. Edgar, New London; Ed F. Evans, Webster City; Charlie Gilbert, Ft. Dodge; Frank A. Gould & Son.Rockwell City; F. E. Humphrey, North English; C. W. Halsted & Sons, Ames; Leonard Heisel & Son, Cedar Rapids; Pearl Kirdhart, Libertyville; J. H. Lachmiller, Webster City; W. A. McMahon, West Liberty; Will Michael, Salem; Arthur Moore, Leavenworth, Kansas.

Judge....................................L. C. Reese, Prescott, Iowa.

Aged Boar—First, R. M. Boyer, on Prince Big Bone, 43569; second, W. H. Dunbar, on Whitecap Chief, 45853; third, C. W. Halstead & Son, on Eden Valley Chief, 46115; fourth, J. H. Lachmiller, on Igo, 36645; fifth, R. M. Boyer, on Rajah, 32749.

Senior Yearling Boar—First, Ora J. Brouhard, on College Lad; second, Alden Anderson, on Anxiety 3rd, 45129; third, John Branchle, on Soldier Chief Improver, 53811; fourth, Geo. Miller, on Iowa Model, 46087; fifth, A. E. Dennis, on Wonder William, 49189.

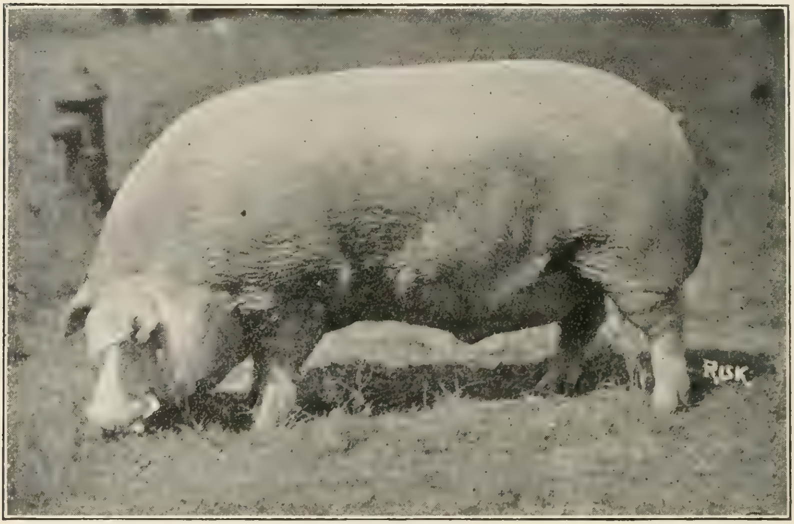
Junior Yearling Boar—First, E. L. Nagle, on Golden Model, 18731; second, R. M. Boyer, on Rajah's Giant, 51763; third, Ora J. Brouhard, on Mammoth Chief; fourth, Alden Anderson, on Chief's Defender, 53889; fifth, R. E. Williams, on Valley Chief, 50959; sixth, C. S. Rock, on Oak Park Chief, 51945; seventh, A. D. Brennaman, on Lenora Colonel, 51223.

Senior Boar Pig—First, E. L. Nagle, on Rector, 18987; second, E. L. Nagle, on Foster, 18985; third, Geo. Steil, on River View Wonder, 53657; fourth, Alden Anderson, on Progressive Chief, 53883; fifth, B. F. Davidson, on Menlo Boy, 53731; sixth, Leonard Willey, on Ruby's Best, 53137; seventh, R. M. Boyer, on Hawkeye King, 52147.

Junior Boar Pig—First, R. M. Boyer; second, E. L. Nagle, on King, 54551; third, E. L. Nagle, on Roger, 53553; fourth, Leonard Heisel & Son, on Longfellow Mode, 53637; fifth, Leonard Heisel & Son, on Cedar Rapids Gentleman, 53633; sixth, W. A. McMahon, on Bonnie's Big Bone, 53651; seventh, J. H. Lachmiller, on Colonel Gano 2nd, 53347.

Aged Sow—First, Alden Anderson, on Madeline, 92174; second, F. G. Dickerson, on White Rose 4th, 84714; third, R. M. Boyer, on Posey First, 72246; fourth, Alden Anderson, on Priceless, 89690; fifth, Leonard Heisel & Son, on Lenora Queen 4th, 100702; sixth, J. H. Lachmiller, on Mabel, 86876; seventh, John Branchle, on Marigold 5th.

Senior Yearling Sow—First, Alden Anderson, on Miss Hope, 121550; second, Ora J. Brouhard, on White Rose; third, W. H. Dunbar, on Hawaiian Hila, 111128; fourth, R. M. Boyer, on Maybe, 115972.



GOLDEN MODEL
Grand Champion Chester White Boar at the 1918 Iowa State Fair owned by E. L. Nagle & Sons, Deep River.

Junior Yearling Sow—First, R. M. Boyer, on Rajah's Giantess, 106346; second, Alden Anderson, on Model Lady, 121552; third, R. M. Moyer, on Rajah's Giantess 2nd, 116746; fourth and sixth, Ora J. Brouhard; fifth, W. H. Dunbar, on Ada J., 111130; seventh, A. D. Brennaman, on Mammouth Queen, 100710.

Senior Sow Pig—First, Alden Anderson, on Victoria, 121546; second, F. E. Humphreys, on Acme Princess Alice, 120740; third, E. L. Nagle & Son, on Grace, 32988; fourth, F. E. Humphreys, on Acme Jean, 120736; fifth, E. L. Nagle & Son, on Lilly H., 32986; sixth, Leonard Heisel & Son, on Iowa Lady, 121082; seventh, R. M. Boyer, on Lady Big Bone, 120426.

Junior Sow Pig—First, W. H. Dunbar; second, F. E. Humphrey's, on Acme Jennie, 120728; third, W. H. Dunbar; fourth, Geo. Steil; fifth, E. L. Nagle & Son, on Sylvia 1st, 120802; sixth, J. H. Lachmiller, on Giant Maid 2nd, 120368; seventh, Ora J. Brouhard.

Senior Champion Boar—E. L. Nagle & Son, on Golden Model, 18731.

Senior Champion Sow—Alden Anderson, on Madeline, 92174.

Junior Champion Boar—B. M. Boyer, on Big Albert.

Junior Champion Sow—Alden Anderson, on Victoria.

Grand Champion Boar—E. L. Nagle & Son, on Golden Model, 18731.

Grand Champion Sow—Alden Anderson, on Madeline, 92174.

Aged Herd Owned by Exhibitor—First, R. M. Boyer; second, W. H. Dunbar; third, Alden Anderson; fourth, Ora J. Brouhard.

Aged Herd Owned and Bred by Exhibitor—First, R. M. Boyer; second, Ora J. Brouhard.

Young Herd Owned by Exhibitor—First and fifth, E. L. Nagle; second, W. H. Dunbar; third, Alden Anderson; fourth, R. M. Boyer; sixth, Leonard Heisel & Son; seventh, F. E. Humphreys.

Young Herd Owned and Bred by Exhibitor—First and fifth, E. L. Nagle; second, W. H. Dunbar; third, Alden Anderson; fourth, B. M. Boyer; sixth, Leonard Heisel & Son; seventh, F. E. Humphreys.

Get of Sire—First, Alden Anderson; second, B. M. Boyer; third, Ora J. Brouhard; fourth and sixth, W. H. Dunbar; fifth, E. L. Nagle & Son; seventh, Otto Schouboe.

Produce of Dam—First and fourth, B. M. Boyer; second W. H. Dunbar; third and sixth, E. L. Nagle & Son; fifth, W. H. Dunbar; seventh, Otto Schouboe.

CHESTER WHITE FUTURITY.

SPRING PIGS.

Boars—First, B. M. Boyer & Sons, on Big Albert, 53385; second, E. L. Nagle & Son on King, 53551; third, E. L. Nagle & Son on Rodger, 53553; fourth, L. Heisel & Son on Mammoth Challenge, 53643; fifth, Leonard Heisel & Son on Hannibal, 53651; sixth, W. A. McMahon on Bonnie's Big Bone, 53651; seventh, J. H. Lachmiller on Colonel Gano, 53345; eighth, Geo. Steil on Big Boned Industry, 53917.

Sows—First, F. E. Humphreys on Jennie, 120728; second, E. L. Nagle & Son on Sylvia 1st, 120802; third, J. H. Lachmiller on Giant Maid, 120366; fourth, O. J. Brouhard; fifth, Geo. Miller on Phoebe's Kind, 122014; sixth, Leonard Heisel & Son on Miss Mammoth King, 121088; seventh, E. L. Nagle & Son on Sylvia 2nd, 120804; eighth, J. H. Lachmiller on Giant Maid 2nd, 120386.

Litters of Four—First, E. L. Nagle & Son; second, Ora J. Brouhard; third, Leonard Heisel & Son; fourth, B. M. Boyer & Sons; fifth, E. L. Nagle & Son; sixth, F. E. Humphreys; seventh, J. H. Lachmiller; eighth, Otto Schouboe.

BERKSHIRE.

EXHIBITORS—E. Kershner & Son, Marion, Iowa; Rookwood Farm, Ames, Iowa.

JUDGE..................................CHAS. A. MARKER, Auburn, Ill.

Aged Boar—First, E. Kershner & Son on Iowana Royal, 231109; second, Rookwood Farms.

Senior Champion Boar—E. Kershner & Son, on Iowana Royal, 231109.

Grand Champion Boar—E. Kershner & Son on Iowana Royal, 231109.

HAMPSHIRE.

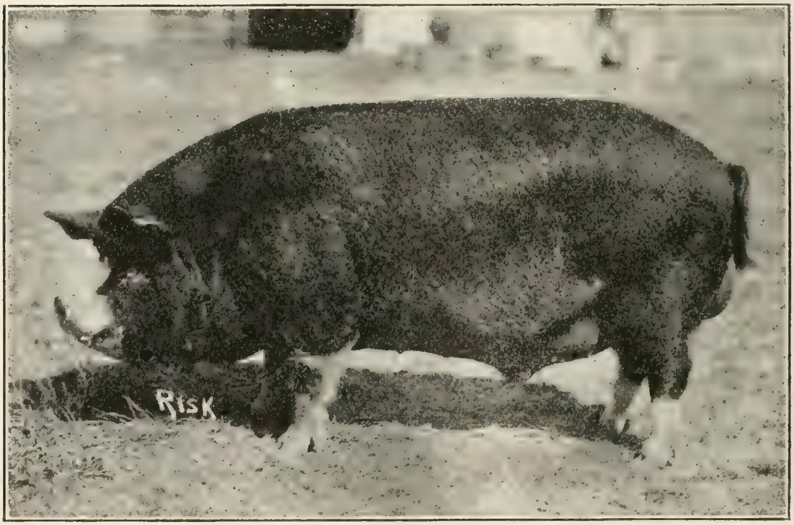
EXHIBITORS—W. S. Aldrich & Co., Council Bluffs; W. O. Berkihiser & Son, Mt. Pleasant; C. S. Bratt & Son, Arapahoe, Neb.; T. C. Cole, Thurman; John Finnell, Jr., & Son, Hamburg; Hopley Stock Farm, Atlantic; E. R. Hem, Salem; E. L. Henke, Atlantic; Clayton Messenger, Keswick; M. C. Morrison, Adelphi; J. H. Nissen & Sons, Lyons; R. L. Pemberton, Montour; Scudder Bros., Doniphan, Neb.; Art Shaw, Oskaloosa; F. F. Silver, Cantril; John Turner, DeWitt; C. J. Ward, Cameron, Mo.

Aged Boar—First, T. C. Cole on Draper Lad, 36647; second, Clayton Messenger on Peerless Boy, 44739; third, Wickfield Farms on Lookout's Lad's

Pal, 37659; fourth, J. H. Nissen & Son on Lyon's Boy, 42153; fifth, Turner Brothers on Scottish Lad 3rd, 36725; sixth, Scudder Brothers on America, 36111; seventh, C. S. Bratt & Son on Bud.

Senior Yearling Boar—First, T. C. Cole on Lieut. Wickware, 45701; second, Hopley Stock Farm on Homestake, 43111; third, Wickfield Farms on Wickware Model, 45467; fourth, Clayton Messenger on Gen. Tipton's Approval, 44313; fifth, Scudder Brothers on Kansas Kid; sixth, Clayton Messenger on Sioux Lad, 57983; seventh, E. R. Hem on Wickware Perfect, 47029.

Junior Yearling Boar—First, John Finnell & Son on Missouri Duke, 47421; second, John Finnell & Son on King James, 47417; third, Clayton Messenger on Messenger Boy's Defender, 57977; fourth, Wickfield Farm on Lookout Commander, 45497; fifth, T. C. Cole on Topsy Lad, 54595; sixth, T. C. Cole on Norah's Cherokee 1st, 45225; seventh, Scudder Brothers on Tipton's Lad, 47591.



IOWANA ROYAL
Grand Champion Berkshire Boar at the 1918 Iowa State Fair. Owned by E. Kershner, Marion.

Senior Boar Pig—First, Clayton Messenger on Direct Boy, 56079; second, Clayton Messenger on Hawkeye Professor, 57087; third, Scudder Brothers on Buster; fourth, H. S. Aldrich & Company on Cherokee Patain, Jr. 3rd; fifth, Hopley Stock Farm on Westside Pride; sixth, Wickfield Farms on Lookout Rocket, 58277; seventh, T. C. Cole on Parole's Finish, 56133.

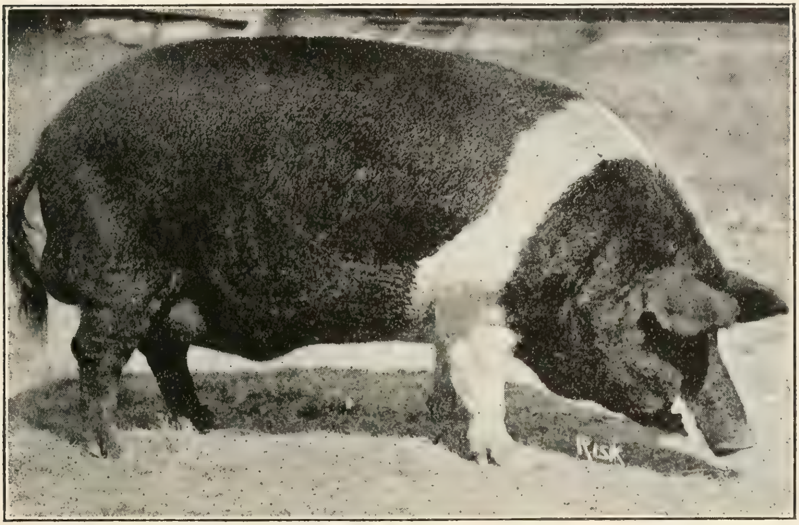
Junior Boar Pig—First, Wickfield Farms; second, Clayton Messenger on Hawkeye Pride, 57981; third, Clayton Messenger on Pedro Jim; fourth, Turner Brothers; fifth, E. R. Hem; sixth, J. H. Nissen & Sons on Yankee Kid; seventh Wickfield Farm.

Aged Sow—First, Clayton Messenger on Sioux Queen 3rd, 38996; second, Scudder Brothers on Susie's Pride, 67868; third, Wickfield Farms on Vennie B., 76008; fourth, Scudder Brothers on Princess Patsy, 52218; fifth, Turner Brothers on Isabelle 2nd, 80852; sixth, Clayton C. Messenger on Flora, 92022.

Senior Yearling Sow—First, Wickfield Farms on Cameo, 91620; second, Wickfield Farms on Rose Wickware; third, Clayton Messenger on Dora; fourth, Scudder Brothers on Smooth Girl Over, 93502; fifth, G. S. Erb on Lady Bess; sixth, J. H. Nissen & Son on Lady Mary, 104788; seventh, Clayton Messenger on Scottish Girl 15th, 106040.

Junior Yearling Sow—First, Clayton Messenger on Hawkeye Queen, 118962; second, C. S. Bratt & Son on Bratt's Queen, 114514; third, T. C. Cole on Marion, 93826; fourth, Wickfield Farms on Lookout Necklace, 121128; fifth, C. S. Bratt & Son on Alfalfa Queen 52nd; sixth, Clayton Messenger on Hawkeye Miss, 118964; seventh, Wickfield Farm on Birdie Lookout 2nd, 122306.

Junior Yearling Sow—First, G. S. Erb on Julia Maid, 124288.



LIEUTENANT WICKWARE
Grand Champion Hampshire Boar at the 1918 Iowa State Fair. Owned by T. C. Cole, Thurman.

Senior Sow Pig—First, Hopley Stock Farm on Westside Lady; second, G. S. Erb on Nora Longview, 124292; third, Clayton Messenger on Scottish Girl 20th, 120782; fourth, G. S. Erb on Bessie Tipton, 124296; fifth, Wickfield Farm on Ruby Lookout, 122628; sixth, C. S. Bratt & Son; seventh, Scudder Brothers.

Junior Sow Pig—First, J. H. Nissen & Son on Enid, 124188; second, Clayton Messenger on Hawkeye Lady, 121854; third, Clayton Messenger on Hawkeye Lady 2nd, 121856; fourth, E. L. Henke on Henke's Queen, 120956; fifth, J. H. Nissen & Son on Lenore, 124192; sixth, Hopley Stock Farm on Westside Azora; seventh, Wickfield Farms.

Senior Champion Boar—T. C. Cole on Lieutenant Wickware, 45791.

Senior Champion Sow—Clayton Messenger on Sioux Queen 3rd.

Junior Champion Boar—Clayton Messenger on Direct Boy.

Junior Champion Sow—Hopley Stock Farm on Westside Lady.

Grand Champion Boar—T. C. Cole on Lieutenant Wickware, 45791.

Grand Champion Sow—Clayton Messenger on Sioux Queen 3rd.

Aged Herd, Owned by Exhibitor—First and fourth, Clayton Messenger; second and fifth, Wickfield Farm; third and sixth, Scudder Brothers; seventh, G. S. Erb.

Aged Herd, Owned and Bred by Exhibitor—First and third, Clayton Messenger; second and fifth, Wickfield Farms; fourth, Scudder Brothers; sixth, G. S. Erb.

Young Herd, Owned by Exhibitor—First and second, Clayton Messenger; third and seventh, Wickfield Farms; fourth, J. H. Nissen; fifth, Scudder Brothers; sixth, J. C. Cole.

Young Herd Owned and Bred by Exhibitor—First and second, Clayton Messenger; third and sixth, Wickfield Farms; fourth, J. H. Nissen & Son; fifth, Scudder Brothers; seventh, C. S. Bratt.

Get of Sire—First and third, Clayton Messenger; second and fifth, Wickfield Farms; fourth, Scudder Brothers; sixth, J. H. Nissen & Son; seventh, C. S. Bratt & Son.

Produce of Dam—First and second, Clayton Messenger; third, Scudder Brothers; fourth, Wickfield Farms; fifth, J. H. Nissen & Son; sixth, C. S. Bratt & Son; seventh, E. L. Henke.

SPECIAL PRIZE OFFERED BY THE HAMPSHIRE ADVOCATE.

Best Pair Pigs, Under Six Months, Shown by Resident of Iowa—Clayton Messenger.

SPECIAL PRIZES OFFERED BY AMERICAN HAMPSHIRE SWINE RECORD ASSOCIATION AND IOWA HAMPSHIRE BREEDERS' ASSOCIATION.

Four Pigs, Under Six Months, Bred and Exhibited by Resident of Iowa—First, Wickfield Farms; second, J. H. Nizzen & Son; third, T. C. Cole.

SPECIAL PRIZE OFFERED BY IOWA HAMPSHIRE BREEDERS' ASSOCIATION.

Best Boar Pig, Under Six Months, Shown by Resident of the State of Iowa—First, Edgar Miller.

Best Sow Pig Under Six Months, Shown by Resident of the State of Iowa—First, Clayton Messenger.

MULE FOOT.

Exhibitors—J. W. Cox & Son, Arapahoe, Nebraska; F. S. Taylor, What Cheer, Iowa.

Judge ....H. H. Kildee, Ames, Iowa.

Aged Boar—First, F. S. Taylor on Daisie's Corrector, 62968; second, J. W. Cox & Son on Napoleon, 61763.

Senior Yearling Boar—First, F. S. Taylor on Corrector 4th, 61641.

Junior Yearling Boar—First, J. W. Cox & Son on Giant Chief, 61639; second, F. S. Taylor on Corrector 5th, 61805; third, F. S. Taylor on Taylor's Model.

Senior Boar Pig—First, F. S. Taylor on Corrector 7th; second, F. S. Taylor on Corrector 8th; third, J. W. Cox & Son on Riverside King, 61327.

Junior Boar Pig—First, F. S. Taylor; second and third, J. W. Cox & Son.

Aged Sow—First, F. S. Taylor on Darkness Again, 62788; second, J. W. Cox & Son on Napola, 63144; third, F. S. Taylor on Corrector Lady 1st, 62958; fourth, J. W. Cox & Son on Princess Wonder, 61504.

Senior Yearling Sow—First, F. S. Taylor on Darkness Again, 62960; second, F. S. Taylor.

Junior Yearling Sow—First, F. S. Taylor, Mollie T., 62966; second, J. W. Cox & Son; third, F. S. Taylor.

Senior Sow Pig—First, F. S. Taylor on Correctness 20; second and fourth, J. W. Cox & Son; third, F. S. Taylor on Correctness 21.

Junior Sow Pig—First and second, J. W. Cox & Son; third, F. S. Taylor.

Senior Champion Boar—F. S. Taylor.

Senior Champion Sow—F. S. Taylor.

Junior Champion Boar—F. S. Taylor.

Junior Champion Sow—F. S. Taylor.

Grand Champion Boar Any Age—F. S. Taylor.

Grand Champion Sow Any Age—F. S. Taylor.

Aged Herd, Owned by Exhibitor—First and third, F. S. Taylor; second, J. W. Cox.

Aged Herd, Owned and Bred by Exhibitor—First, F. S. Taylor; second, J. W. Cox & Son.

Young Herd, Owned by Exhibitor—First and second, F. S. Taylor; third, J. W. Cox.

Young Herd, Owned and Bred by Exhibitor—First and second, F. S. Taylor; third, J. W. Cox & Son.

Get of Sire—First and second, F. S. Taylor; third, J. W. Cox & Son.

Produce of Dam—First and second, F. S. Taylor; third, J. W. Cox & Son.

LARGE YORKSHIRE.

Exhibitors—E. Haynes, Guthrie Center; Dr. E. O. Thomas, Iowa City; B. F. Davidson, Menlo.

Judge ....H. H. Kildee, Ames.

Aged Boar—First, B. F. Davidson on Oak Lodge Sardia, 53060; second, E. Haynes on Guthrie Boy 1st, 25727.

Junior Yearling Boar—First, B. F. Davidson on Deer Creek 10th, 26921.

Senior Boar Pig—First, B. F. Davidson on Deer Creek Lee 11th, 26922; second, B. F. Davidson on Deer Creek Lee 12th, 26923; third, E. Haynes on Guthrie Boy 3rd, 26655; fourth, Davidson & Martin on Ohio Goods; fifth, Davidson & Martin on Ohio Good 2nd.

Junior Boar Pig—First, B. F. Davidson on Deer Creek Rena 15th, 26959; second and fourth, E. Haynes; third, B. F. Davidson on Deer Creek Rena 16th, 26962.

Aged Sow—First, B. F. Davidson on Deer Creek Elena 4th, 24198; second, B. F. Davidson on Lake Park Ruby 237th, 25152; third, E. Haynes on Fan C. Stuff Lady, 24251.

Senior Yearling Sow—First, B. F. Davidson on Deer Creek Rena 5th, 25921.

Junior Yearling Sow—First, B. F. Davidson on Deer Creek Ruby 5th, 29654; second, B. F. Davidson on Deer Creek Ruby 6th; third, E. Haynes on Maple Spring Queen 2nd, 26653; fourth, E. Haynes on Maple Spring Queen 3d, 26654.

Senior Sow Pig—First, B. F. Davidson on Deer Creek Della, 17th, 26924; second, Davidson and Martin on Ohio Lady; third, B. F. Davidson on Deer Creek Della 18th; fourth, Davidson & Martin on Ohio Lady 2nd; fifth, E. Haynes on Guthrie Ann 3rd, 26657; sixth, E. Haynes on Guthrie Ann 4th, 26658.

Junior Sow Pig—First, B. F. Davidson on Deer Creek Rena 17th, 26961; second and fourth, E. Haynes; third, B. F. Davidson on Deer Creek Rena 16th, 26960.

Senior Champion Boar—B. F. Davidson on Oak Lodge Sardia, 53060.

Senior Champion Sow—B. F. Davidson on Deer Creek Elena 4th, 24198.

Junior Champion Boar—B. F. Davidson on Deer Creek Lee 13th.

Junior Champion Sow—B. F. Davidson on Deer Creek Lee 11th.

Grand Champion Boar Any Age—B. F. Davidson on Oak Lodge Sardia, 53060.

Grand Champion Sow Any Age—B. F. Davidson on Deer Creek Elena, 4th.

Aged Herd Owned by Exhibitor—First, B. F. Davidson.

Aged Herd, Owned and Bred by Exhibitor—First, B. F. Davidson.

Young Herd Owned by Exhibitor—First and fourth, B. F. Davidson; second, Davidson & Martin; third, E. Haynes.

Young Herd, Owned and Bred by Exhibitor—First and third, B. F. Davidson; second, E. Haynes.

Get of Sire—First and fourth, B. F. Davidson; second, Davidson and Martin; third, E. Haynes.

Produce of Dam—First and second, B. F. Davidson; third, E. Haynes; fourth, Davidson and Martin.

TAMWORTH.

Exhibitors—F. H. Osen, Anita; Propst Bros., Iowa City.

Judge ....H. H. Kildee, Ames, Iowa.

Aged Boar—First, Propst Brothers on Knoll Slope Ike, 19466; second, F. H. Osen on Knoll Chaffee, 19464.

Senior Boar Pig—First and fourth, Propst Brothers; second, Dr. E. O. Thomas; third, F. H. Osen on Banington Tam o' Shanter, 21070; fifth, F. H. Osen on Banington Atlantic Swell, 21049.

Junior Boar Pig—First, Dr. E. O. Thomas; second, Propst Brothers; third and fourth, F. H. Osen.

Aged Sow—First, Propst Brothers on Miss Knoll 2nd, 17462; second, Propst Brothers.

Senior Sow Pig—First and fourth, Dr. E. O. Thomas; second and third, Propst Brothers; fifth, F. H. Osen on Hawthorne Moonshine, 21065.

Junior Sow Pig—First and second, Dr. E. O. Thomas third and fourth, Propst Brothers; fifth and sixth, F. H. Osen.

Senior Champion Boar—Propst Brothers on Knoll Slope Ike, 19466.

Senior Champion Sow—Propst Brothers on Miss Knoll.

Junior Champion Boar—Dr. E. O. Thomas on Glenary Long Boy.

Junior Champion Sow—Dr. E. O. Thomas on Miss Knoll 12th.

Champion Boar Any Age—Propst Brothers on Knoll Slope Ike, 19466.

Champion Sow Any Age—Propst Brothers on Miss Knoll.

Aged Herd Owned by Exhibitor—Propst Brothers.

Young Herd Owned by Exhibitor—First and fifth, Propst Brothers; second and third, Dr. E. O. Thomas; fourth, F. H. Osen.

Young Herd Owned and Bred by Exhibitor—First and third Propst Brothers; second, Dr. E. O. Thomas; fourth, F. H. Osen.

Get of Sire—First, Propst Brothers; second and third, Dr. E. O. Thomas; fourth, F. H. Osen.

Produce of Dam—First, Propst Brothers; second and third, Dr. E. O. Thomas; fourth, F. H. Osen.

SPECIAL PRIZE OFFERED BY AMERICAN TAMWORTH SWINE RECORD ASSOCIATION.

Best Four Pigs Under Six Months of Age—Dr. E. O. Thomas.

BOYS' AND GIRLS' DEPARTMENT.

Exhibitors—William Carpenter, Cantril; Bates Cochran, Cantril; Leslie Cochran, Central; Lorraine Dew, Des Moines; Aletha Dew, Des Moines; Maxwell O. Elbert, Ross; John George Halsey, Rowan; Virgil C. Hougen, McCallsburg; Flora Hoskins, Cantril; Harlan Harper, Ames; George Knop, Atlantic; Harry and Roy Longfellow, Blockton; Alta G. Lane, Knoxville; Katrina & Elizabeth Matthias, Des Moines; E. M. Meneough, Grimes Edgar Miller, Cantril; Matthias Moritz, Des Moines; Wilbur L. Plager, Grundy

Center; Weston Ruth, West Burlington; John Silver, Stockport; Blanche E. Shaw, Oskaloosa; Virgil Stevens, Collins; John H. Turner, Jr., DeWitt; Jennie E. Turner, DeWitt; Willie J. Turner, DeWitt; Lynn Teter, Cantril; Helen Teter, Cantril; Ida Teter, Cantril; Wealtha Wellborn, Cantril; Teresa Wellborn, Cantril; Oscar Zellmer, Atlantic; Wilbur Hoskins, Cantril; Arnold Holmes, Muscatine; Ivan Holmes, Muscatine; Forrest Procter, Hampton; Russell Smith, Blakesburg; Geo. Greenlee, Lineville; Maynard Thomas, Iowa City; Hazel Thomas, Iowa City; Otis M. Jorstad, McCallsburg; Perry Robert, Chariton; Glen M. Severson, Cambridge; Dean Crocker, Jefferson; H. J. Branson, West Branch; Satterlwaite, Waynard, Muscatine.

POLAND CHINA DIVISION.

Judge ....H. H. Kildee, Ames, Iowa.

Best Pig, Either Sex—First, Maxwell O. Ehlert; second, Guy Michener; third, Virgil Buchmiller; fourth, E. M. Meneough; fifth, Wilbur L. Plager on Lady Pearl; sixth, Frank Buchanan; seventh, Gerald Spray; eighth, Ernest H. Cox; ninth, Otis M. Jorstad on Miss Columbia; tenth, Virgil Hougen on Giant Lady.

DUROC JERSEY DIVISION.

Judge ....H. H. Kildee, Ames, Iowa.

Best Pig, Either Sex—First, Glen M. Swanson on Sunny Slope May; second, Oscar Zellmer on Willow Grove Queen; third, Geo. Knop; fourth, Harold Holmes on Favorite's King; fifth, Harlan H. Harper; sixth, Lloyd Monroe; seventh, Royal Overholser; eighth, Ivan Holmes; ninth, Alta Lane.

CHESTER WHITE DIVISION.

Judge ....H. H. Kildee, Ames, Iowa.

Best Pig, Either Sex—First, Dean Crocker; second, Harry Longfellow; third, Virgil Stevens; fourth, Fred McLaughlin; fifth, Roy Longfellow; sixth, Harold F. Boyer; seventh, Geo. Greenlee.

HAMPSHIRE DIVISION.

Judge ....H. H. Kildee, Ames, Iowa.

Best Hampshire Boar Pig—First, Edgar Miller on Lookout Leader, 58311; second, Willie E. Turner; third, Flora Hoskins on Hoosier Dean, 53291; fourth, John H. Turner & Son; fifth, Blanche E. Shaw; sixth, Jennie E. Turner.

Best Hampshire Gilt—First, John H. Turner, Jr.; second, Wilbur Henke, on Wilbur Henke's Beauty, 120960; third, Willie E. Turner; fourth, Wilbur Hoskins Lookout, 120128; sixth, John Silver on Princess Lookout, 121158; seventh, Harriet S. Brown, on Lenora Tipton.

IOWA PIG CLUB EXHIBIT.

DIVISION NO. 1.

Fat Hogs, Grade or Cross Bred—First, Sherman Rene; second, Ted Cox; third, Forrest Proctor; fourth, Maynard Thomas; fifth, Cecil Hughes; sixth, Ray Nichols; seventh, John H. Turner, Jr.; eighth, Hazel Thomas; ninth, Glen Reeves; tenth, Cecil Waltemeyer; eleventh, Bates Cochran; twelfth, Lisle Fox; thirteen, Willie E. Turner; fourteenth, Wayne Allen; fifteenth, Jennie Turner; sixteenth, Earl Hill; seventeenth, Helen Teter; eighteenth, Ida Teter.

DIVISION NO. II.

Pure Bred Sows of All Breeds—First, Glen M. Severson; second, Guy Michener on Victoria Belle; third, Oscar Zellmer on Golden Lass; fourth, John H. Turner & Son; fifth, Maynard Thomas; sixth, Ernest H. Cox;

seventh, Virgil Buchmiller; eighth, Wilbur Henke; ninth, Harlan H. Harper; tenth, Wilbur L. Plager.

DIVISION NO. III.

Pure Bred Boars of All Breeds—First, Hazel Thomas; second, Maxwell O. Ehlert; third, Stanly White; fourth, Edgar Miller; fifth, Geo. Knop; sixth, Harry Longfellow; seventh, Edward Meneough; eighth, Harold Holmes; ninth, Chas. Ellerman; tenth, Willie E. Turner.

SHEEP DEPARTMENT

Superintendent....................Chas. Escher, Jr., Botna, Iowa.

Sweepstakes.

Best Ram, All Mutton Breeds, Any Age, Bred and Owned by Exhibitor—C. W. Chandler, Kellerton on Shropshire, 483862.

Best Ewe, All Mutton Breeds, Any Age, Bred and Owned by Iowa Exhibitor—A. T. Jones and Sons on Shropshire, 423820.

MERINO CLASS "B".

Exhibitors—A. F. Arnold, Mt. Zion; Richards and Richards, Lodi, Wisconsin.

Judge...................................J. E. Webb, Indianapolis, Ind.

Ram Two Years Old or Over—First, Richards and Richards.

Ram One Year Old and Under Two—First and fourth, Richards and Richards; second and third, A. F. Arnold on 112136 and 112151.

Ram Under One Year—First, Richards and Richards; second and third, A. F. Arnold.

Ewe Two Years Old or Over—First, Richards and Richards; second and third, A. F. Arnold.

Ewe One Year Old and Under—First and second, A. F. Arnold on 112152 and 112149; third, Richards and Richards.

Ewe Under One Year—First and fourth, Richards and Richards; second and third, A. F. Arnold.

Champion Ray Any Age—Richards and Richards.

Champion Ewe Any Age—Richards and Richards.

Flock—First, Richards and Richards; second, A. F. Arnold.

Get of Sire—First, A. F. Arnold.

IOWA SPECIALS.

Ram One Year Old and Under Two—First and second, A. F. Arnold on 112636 and 112151.

Ram Under One Year—First and second, A. F. Arnold.

Ewe Two Years Old or Over—First and second, A. F. Arnold.

Ewe One Year Old and Under Two—First, A. F. Arnold on 112149.

Ewe—Under One Year—First and second, A. F. Arnold.

Champion Ram Any Age—A. F. Arnold on 112151.

Champion Ewe Any Age—A. F. Arnold.

Flock—A. F. Arnold.

MERINO CLASS "C"

Exhibitors—Joe Edgar, New London; A. F. Arnold, Mt. Zion; Richards and Richards, Lodi, Wisconsin.

Judge................................J. E. Webb, Indianapolis, Ind.

Ram Two Years Old or Over—First, Richards and Richards; second, Joe Edgar; third, Richards and Richards.

Ram One Year Old and Under Two—First, A. F. Arnold on 112129; second, Richards; third, Joe Edgar; fourth, A. F. Arnold on 112129.

Ram Under One Year—First and second, Richards and Richards; third and fourth, A. F. Arnold.

Ewe Two Years Old or Over—First, Richards and Richards; second, A. F. Arnold on 1007447; third, A. F. Arnold; fourth, Joe Edgar.

Ewe One Year Old and Under Two—First, A. F. Arnold on 112147; second, A. F. Arnold on 112138; third, Richards and Richards; fourth, Joe Edgar.

Ewe Under One Year—First, A. F. Arnold; second and third, Richards and Richards; fourth, Joe Edgar.

Champion Ram Any Age—Richards and Richards.

Champion Ewe Any Age—Richards and Richards.

Flock—First, Richards and Richards; second, A. F. Arnold; third, Joe Edgar.

Get of Sire—First, Richards and Richards; second, A. F. Arnold; third, Joe Edgar.

IOWA SPECIALS.

Ram Two Years Old and Over—First, Joe Edgar.

Ram One Year Old and Under Two—First, Joe Edgar; second, A. F. Arnold on 112129.

Ram Under One Year—First and second, A. F. Arnold; third, Joe Edgar on Edgar 110.

Ewe Two Years Old and Over—First and second, A. F. Arnold.

Ewe One Year Old and Under Two—First, A. F. Arnold on 112138; second, Joe Edgar.

Ewe Under One Year—First, Joe Edgar; second, Joe Edgar; third, A. F. Arnold.

Champion Ram Any Age—A. F. Arnold.

Champion Ewe Any Age—A. F. Arnold.

Flock—First, A. F. Arnold; second, Joe Edgar.

Get of Sire—First, A. F. Arnold; second, Joe Edgar.

RAMBOUILLET.

Exhibitors—C. S. Brattt & Son, Arapahoe, Nebraska.

Judge....................................J. E. Webb, Indianapolis, Ind.

Ram One Year Old and Under Two—First, C. S. Bratt & Son.

Ram Under One Year—First, C. S. Bratt & Son.

Ewe Two Years Old or Over—First, C. S. Bratt & Son.

Ewe One Year Old and Under Two—First, C. S. Bratt & Son.

Ewe Under One Year—First, C. S. Bratt & Son.

Champion Ram Any Age—C. S. Bratt & Son.

Champion Ewe Any Age—C. S. Bratt & Son.

Flock—C. S. Bratt & Son.

Get of Sire—C. S. Bratt & Son.

COTSWOLD.

Exhibitors—A. W. Arnold, Galesville, Wisconsin; Joe Edgar, New London; Geo. E. Husted, Russell; Richards and Richards, Lodi, Wisconsin; W. A. Taylor & Son, Ames.

Judge.............................Wm. F. Renk, Sun Prairie, Wis.

Ram Two Years Old or Over—First, Richards and Richards on 81802; second, Richards and Richards on 86630;; third, Joe Edgar on 812226; fourth, Geo. E. Husted on 85267.

Ram One Year Old and Under Two—First, Richards and Richards on 88116; second, Joe Edgar on 86509; third, Geo. E. Husted on 92450; fourth, Joe Edgar on 89088.

Ram Under One Year—First, Richards and Richards; second, Geo. E. Husted on 92452; third, Richards and Richards; fourth, Geo. E. Husted on 92451.

Ewe Two Years Old or Over—First, Richards and Richards; second, W. A. Taylor & Son on 83092; third, Joe Edgar on 82935; fourth, Geo. E. Husted on 81631.

Ewe One Year Old and Under Two—First, Richards and Richards; second, Richards and Richards on 89886; third, Joe Edgar on 88095; fourth, Geo. E. Husted 180, 89119.

Ewe Under One Year—First, Richards and Richards; second, Geo. E. Husted on 92454; third, Joe Edgar; fourth, Richards and Richards.

Champion Ram Any Age—Richards and Richards.

Champion Ewe Any Age—Richards and Richards.

Flock—First, Richards and Richards; second, Joe Edgar; third, Geo. E. Husted.

Get of Sire—First, Richards and Richards; second, Geo. E. Husted; third, Joe Edgar; fourth, W. A. Taylor & Son.

IOWA SPECIALS.

Ram Two Years Old or Over—First, Joe Edgar on 81226; second, Geo. E. Husted on 85267; third, W. A. Taylor & Son on 80283.

Ram Two Years Old or Over—First, Joe Edgar on 81226; second, Geo. E. Husted on 85267; third, W. A. Taylor & Son on Maple Grove's 199, 80283.

Ram One Year Old and Under Two—First, Joe Edgar; second, Geo. E. Husted on 92450; third, Joe Edgar on 89088.

Ram Under One Year—First, Geo. E. Husted on 92452; second, Geo. E. Husted on 92451; third, Joe Edgar.

Ewe Two Years Old or Over—First, W. A. Taylor & Son on 83092; second, Joe Edgar on 82935; third, Geo. E. Husted on 81631.

Ewe One Year Old and Under Two—First, Joe Edgar on 88085; second, Geo. E. Husted on 89119; third, Joe Edgar on 88089.

Ewe Under One Year—First, Joe Edgar; second, Geo. Husted on 92454; third, Joe Edgar.

Champion Ram Any Age—Joe Edgar on 81226.

Champion Ewe Any Age—Joe Edgar on 88095.

Flock—First, Joe Edgar; second, Geo. E. Husted; third, W. A. Taylor & Son.

Get of Sire—First, Geo. E. Husted; second, Joe Edgar; third, W. A. Taylor & Son.

SPECIAL PRIZES OFFERED BY AMERICAN COTSWOLD REGISTRY ASSOCIATION.

Pen of Four Lambs, Either Sex—First, Geo. E. Husted; second, Joe Edgar.

HAMPSHIRE.

EXHIBITORS—A. W. Arnold, Galesville, Wisconsin; E. L. Bitterman, Mason City; John Graham & Son, Eldora; Sherwood Brothers, Shelbyville Missouri.

JUDGE............................WM. F. RENK, Sun Prairie, Wis.

Ram Two Years Old or Over—First, E. L. Bitterman on 18469; second, E. L. Bitterman on 19814; third, John Graham & Son on 20332; fourth, John Graham & Son on 19054.

Ram One Year Old and Under Two—First, E. L. Bitterman on 23280; second, John Graham & Son on 21704; third, E. L. Bitterman on 21709; fourth, John Graham & Son on 21703.

Ram Under One Year—First, E. L. Bitterman; second, Iowa State College on 25462; third, Iowa State College on 25463; fourth and fifth, John Graham & Son.

Ewe—Two Years Old or Over—First, Iowa State College on 47218; second, John Graham & Son on 41970; third, John Graham & Son on 46108; fourth, E. L. Bitterman on 46596.

Ewe One Year Old and Under Two—First, Iowa State College on 53517; second, Iowa State College on 52351; third, E. L. Bitterman; fourth, John Graham & Son on 54348; fifth, John Graham & Son on 52349.

Ewe Under One Year—First, Iowa State College on 59234; second, Iowa State College on 59233; third, E. L. Bitterman; fourth, John Graham & Son; fifth, E. . Bitterman.

Champion Ram Any Age—E. L. Bitterman on 18469.

Champion Ewe Any Age—Iowa State College on 53517.

Flock—First, Iowa State College; second, E. L. Bitterman; third, John Graham & Son.

Get of Sire—First, Iowa State College; second, E. L. Bitterman; third, John Graham & Son.

SPECIAL PRIZE OFFERED BY THE AMERICAN HAMPSHIRE SHEEP ASSOCIATION.

Flock Consisting of Two Yearling Ewes, Two Ewe Lambs and Ram Any Age—First, E. L. Bitterman; second, John Graham & Son.

SHROPSHIRE.

EXHIBITORS—C. W. Chandler, Kellerton; E. L. Bitterman, Mason City; H. Hazen & Son, Mt. Pleasant; A. T. Jones & Son, Everly; H. D. Eddingfield, Mt. Pleasant; Daniel Leonard & Son, Corning; Moore and Loveland, Mt. Pleasant; J. A. Taylor, Ames; W. A. Taylor & Son, Ames; R. C. Yohe, Allerton.

JUDGE............................WM. F. RENK, Sun Prairie, Wisc.

Ram Two Years Old or Over—First, E. L. Bitterman on 424411; second, A. T. Jones & Son on 424398; third, J. A. Taylor on 429816; fourth, C. W. Chandler on 427662.

Ram One Year Old and Under Two—First, E. L. Bitterman on 484223; second, C. W. Chandler on 483862; third, Daniel Leonard & Son on Killock; fourth, Iowa State College on 438815.

Ram Under One Year—First, C. W. Chandler on 483858; second, H. D. Eddingfield on 482530; third, E. L. Bitterman on 48430; fourth, C. W. Chandler on 483859.

Ewe Two Years Old or Over—First, A. T. Jones & Son on 423820; second, E. L. Bitterman on 424397; third, C. W. Shandler on 483865; fourth, H. D. Eddingfield on 443913.

Ewe One Year Old and Under Two—First, A. T. Jones on 448517; second, C. W. Chandler on 464824; third, H. D. Eddingfield on 453006; fourth, H. D. Eddingfield.

Ewe Under One Year—First, H. D. Eddingfield on 667130; second, C. W. Chandler on 466570; third, E. L. Bitterman on 466697; fourth, A. T. Jones & Son on 467135.

Champion Ram Any Age—E. L. Bitterman, 424411.

Champion Ewe Any Age—A. T. Jones and Sons on 423820.

Flock—First, A. T. Jones & Son; second, E. L. Bitterman; third, C. W. Chandler; fourth, H. D. Eddingfield.

Get of Sire—First, C W. Chandler; second, H. D. Eddingfield; third, E. L. Bitterman; fourth, A. T. Jones & Son.

IOWA SPECIALS.

Ram Two Years Old or Over—First, A. T. Jones & Son; second, E. L. Bitterman on 438408; third E. L. Bitterman on 422057; fourth, C. W. Chandler on 437358; fifth, H. D. Eddingfield on 429289.

Ram One Year Old and Under Two—First, C. W. Chandler on 483862; second, C. W. Chandler on 483861; third, A. T. Jones & Son on 439195; fourth, H. D. Eddingfield on 441120; fifth, R. C. Yohe on 459171.

Ram Under One Year—First, H. D. Eddingfield on 482530; second, E. L. Bitterman on 484000; ;third, C. W. Chandler on 483859; fourth, E. L. Bitterman on 483999 ; fifth, H. D. Eddingfield on 482526.

Ewe Two Years Old or Over—First, C. W. Chandler on 483865; second H. D. Eddingfeld on 443913; third, R. C. Yohe on 464722; fourth, H. D. Eddingfield on 406835; fifth, E. L. Bitterman on 447621.

Ewe—One Year Old and Under Two—First, C. W. Chandler on 464824; second, H. D. Eddingfield on 447626; third, A. T. Jones & Son on 467142; fourth, H. D. Eddingfield on 450818; fifth, A. T. Jones on 467158.

Ewe Under One Year—First, C. W. Chandler on 466570; second, E. L. Bitterman on 466697; third, A. T. Jones & Son on 467135; fourth, H. D. Eddingfeld on 467133; fifth, E. L. Bitterman on 466696.

Champion Ram Any Age—C. W. Chandler on 483862.

Champion Ewe Any Age—C. W. Chandler on 483865.

Flock—First, C. W. Chandler; second, H. D. Eddingfield; third, E. L. Bitterman; fourth, R. C. Yohe.

Get of Sire—First, H. D. Eddingfield; second, E. L. Bitterman; third, A. T. Jones & Son; fourth, R. C. Yohe.

SPECIAL PREMIUMS—AMERICAN SHROPSHIRE REGISTRY ASSOCIATION.

Ram Two Years Old or Over—First, A. T. Jones & Son; second, E. L. Bitterman on 438408; third, E. L. Bitterman on 422049; fourth, C. W. Chandler on 437358; fifth, H. D. Eddingfield on 429289.

Ram One Year Old Under Two—First, C. W. Chandler on 483862; second, C. W. Chandler on 483861; third, A. T. Jones & Son on 439195; fourth, H. D. Eddingfield on 441120; fifth, R. C. Yohe on 459171.

Ram Lamb—First, C. W. Chandler on 483858; second, H. D. Eddingfield on 482530; third, E. L. Bitterman on 484000; fourth, C. W. Chandler on 483859; fifth, E. L. Bitterman on 483999.

Ewe One Year Old and Under Two—First, A. T. Jones & Son on 448517; second, C. W. Chandler on 464824; third, H. D. Eddingfield on 447626; fourth, A. T. Jones & Son on 467142; fifth, H. D. Eddingfield on 450818.

Ewe Lamb—First, H. D. Eddingfield on 667130; second, C. W. Chandler on 466570; third, E. Bitterman on 466697; fourth, A. T. Jones & Son on 467135; fifth, H. D. Eddingfield on 467133.

Ram Any Age—First, C. W. Chandler on 483862.

Ewe Any Age—First, A. T. Jones & Son on 448517.

Pen of Four Lambs—First, C. W. Chandler; second, H. D. Eddingfield; third, E. L. Bitterman; fourth, A. T. Jones & Son; fifth, R. C. Yohe.

Pen Three Yearling Ewes—First, A. T. Jones & Son; second, E. L. Bitterman; third, H. D. Eddingfield; fourth, C. W. Chandler; fifth, R. C. Yohe.

Pen Three Yearling Rams—First, C. W. Chandler; second, A. T. Jones & Son; third, E. L. Bitterman; fourth, H. D. Eddingfield; fifth, R. C. Yohe.

Best Show of His Own Breeding to Exhibitor Never Having Shown at the Iowa State Fair—R. C. Yohe.

OXFORD DOWNS.

EXHIBITORS—J. L. Baldwin, Osceola; C. C. Croxen, West Liberty; John Graham & Son, Eldora; F. H. Osen, Anita; Richards and Richards, Lodi, Wisconsin.

JUDGE............................WM. F. RENK, Sun Prairie, Wis.

Ram Two Years Old or Over—First, C. C. Croxen on 71397; second, John Graham & Son on 75304; third, Richards and Richards on 79761; fourth, John Graham & Son on 76359; fifth, F. H. Osen on 75258.

Ram One Year Old and Under Two—First, John Graham & Son on 80037; second, Richards & Richards on 81542; third, John Graham & Son on 85578; fourth, C. C. Croxen on 79769; fifth, C. C. Croxen on 79770.

Ram Under One Year—First, Iowa State College; second, John Graham & Son on 85567; third, John Graham & Son on 85566; fourth, Richards & Richards; fifth, C. C. Croxen on 85550.

Ewe Two Years Old or Over—First, John Graham & Son on 71470;second, Richards & Richards on 75444; third, Richards & Richards on 75450; fourth, C. C. Croxen on 65415; fifth, Iowa State College on 76573.

Ewe One Year Old and Under Two—First, C. C. Croxen on 85548; second, Iowa State College on 80139; third, Richards and Richards on 84563; fourth, C. C. Croxen on 85547; fifth, John Graham & Son on 80034.

Ewe Under One Year—First, John Graham & Son on 85564; second, Richards and Richards; third, John Graham & Son on 85565; fourth, Iowa State College; fifth, C. C. Croxen 85554.

Ram Any Age—C. C. Croxen on 71397.

Champion Ewe Any Age—John Graham & Son on 71470.

Flock—First, John Graham & Son; second, C. C. Croxen; third, Richards and Richards; fourth, Iowa State College.

Get of Sire—First, John Graham & Son; second, C. C. Croxen; third, Richards and Richards; fourth, Iowa State College.

IOWA OXFORD SPECIALS.

Ram Two Years Old or Over—First, John Graham & Son on 75304; second, John Graham & Son on 76359; third, J. L. Baldwin on 75358.

Ram One Year Old and Under Two—First, John Graham & Son on 85578; second, C. C. Croxen on 79769; third, John Graham & Son on 80038; fourth, C. C. Croxen on 79770.

Ram Under One Year—First, John Graham & Son on 85567; second, John Graham & Son on 85566; third, C. C. Croxen on 85550; fourth, C. C. Croxen on 85553.

Ewe Two Years Old or Over—First, John Graham & Son on 75296; second, C. C. Croxen on 65415; third, John Graham & Son on 80028; fourth, F. H. Osen on 75633.

Ewe One Year Old and Under Two—First, C. C. Croxen; second, John Graham & Son on 80034; third, John Graham & Son on 85576; fourth, C. C. Croxen on 79767.

Ewe Under One Year—First, John Graham & Son on 85565; second, John Graham & Son on 85564; third, C. C. Croxen on 85554; fourth, C. C. Croxen on 85549.

Champion Ram Any Age—John Graham & Son on 80037.

Champion Ewe Any Age—C. C. Croxen.

Flock—First, C. C. Croxen; second, John Graham & Son; third, F. H. Osen.

Get of Sire—First, C. C. Croxen; second, John Graham & Son; third, F. H. Osen; fourth, J. L. Baldwin.

SPECIAL PRIZES OFFERED BY THE AMERICAN OXFORD DOWN RECORD ASSOCIATION, 1918.

Best Yearling Ram—First, John Graham on 80037; second, John Graham on 85578; third, C. C. Croxen on 79769.

Best Yearling Ewe—First, C. C. Croxen on 85548; second, C. C. Croxen on 85547; third, John Graham on 80034.

Best Pen of Four Lambs, Either Sex—First and third, John Graham & Son; second, C. C. Croxen.

SOUTHDOWN.

Exhibitors—A. W. Arnold, Galesville, Wisconsin; Iowa State College on 35627; E. L. Bitterman, Mason City; Sherwood Brothers, Shelbyville, Mo.; Turner Brothers, DeWitt.

Ram Two Years Old or Over—First, Iowa State College on 33880; second and third, E. L. Bitterman on 339244.

Ram One Year Old and Under Two—First, Iowa State College on 35399; second, Iowa State College on 35627; third, E. L. Bitterman; fourth, Turner Brothers on 35400.

Ram Under One Year—First, Iowa State College; second, Iowa State College on 31533; third, Turner Brothers; fourth, E. L. Bitterman.

Ewe Two Years Old or Over—First, Iowa State College on 31533; second, Turner Brothers on 34424; third, E. L. Bitterman on 31007.

Ewe One Year Old and Under Two—First, E. L. Bitterman; second, Iowa State College on 35403; third, Iowa State College on 35634; fourth, Turner Brothers on 35631; fifth, E. L. Bitterman on 35397.

Ewe Under One Year—First, Iowa State College; second; Iowa State College; third, Turner Brothers; fourth, E. L. Bitterman; fifth, E. L. Bitterman.

Champion Ram Any Age—Iowa State College on 33880.

Champion Ewe Any Age—E. L. Bitterman.

Flock—First, Iowa State College; second, E. L. Bitterman; third, Turner Brothers.

Get of Sire—First, Iowa State College; second, E. L. Bitterman.

CHEVIOT.

Exhibitors—A. W. Arnold, Galesville, Wisconsin; Elmer Reed, Mt. Pleasant; Richards & Richards, Lodi, Wisconsin; W. A. Taylor & Son, Ames.

Judge.................................Wm. F. Renk, Sun Prairie, Wis.

Ram Two Years Old or Over—First, W. A. Taylor & Son on 9460; second, W. A. Taylor & Son on 9457; third, Elmer Reed on 10164.

Ram One Year Old and Under Two—First, Richards & Richards on 9940; second, W. A. Taylor & Son on 9945; third, W. A. Taylor & Son on 9948.

Ram Under One Year—First, Elmer Reed; second, W. A. Taylor & Son; third, W. A. Taylor & Son.

Ewe Two Years Old or Over—First, Elmer Reed on 9055; second, W. A. Taylor & Son on 468, 8927; third, Richards & Richards on Wisconsin Express Station 8528.

Ewe One Year Old and Under Two—First, Richards & Richards on 10149; second, Elmer Reed on 10202; third, W. A. Taylor & Son on 9944.

Ewe Under One Year—First, Richards & Richards; second, W. A. Taylor & Son.

Champion Ram Any Age—W. A. Taylor on 9457.

Champion Ewe Any Age—Elmer Reed on 9055.

Flock—First, W. A. Taylor & Son; second, Elmer Reed; third, Richards & Richards.

Get of Sire—First, W. A. Taylor & Son; second, Elmer Reed.

WOOL EXHIBIT.

EXHIBITORS—Joe Edgar, New London; A. T. Jones & Son, Everly; E. L. Bitterman, Mason City; W. A. Taylor & Son, Ames.

Judge....................................J. E. WEBB, Indianapolis, Ind.

Long Wool Fleece—First and second, Joe Edgar; third and fourth, W. A. Taylor & Son.

Medium Wool—First and fourth, A. T. Jones & Son; second and third, E. L. Bitterman.

Sweepstakes—A. T. Jones & Son.

SHEARING CONTEST.

EXHIBITORS—J. S. Baber, Des Moines; C. H. Brown, Des Moines; L. O. Burt, Valley Junction; John Graham & Son, Eldora; W. R. Hansen, Union; S. H. Mathews, Woodburn; R. C. Pyles, Union; S. Rail, Birmingham; E. G. Uhl, Ames.

Shearing With Hand Shears by Professionals—First, J. S. Baber; second, E. C. Pyles; third, C. H. Brown; fourth, S. Rail.

Shearing With Hand Shears by Amateurs—First, John Graham & Son; second, S. H. Mathews; third, W. A. Taylor & Son; fourth, L. O. Burt; fifth, E. G. Uhl.

MILCH GOATS.

EXHIBITORS—N. Bartholomew, Des Moines; Orville Sheets, Des Moines; Geo. Briedson, Panora; Mrs. Jessie Watson, Wycombe, Pa.

Judge.............................D. H. MILLER, Council Bluffs, Ia.

GRADE TOGGENBURG.

Doe Two Years Old or Over—First, N. Bartholomew.
Doe Under One Year—First, N. Bartholomew.

NUBIAN.

Buck Two Years Old or Over—First, N. Bartholomew on Indigo Red.

Buck Under One Year—First, N. Bartholomew; second, Mrs. Jessie Watson.

Doe Two Years Old or Over—First, N. Bartholomew; second, O. R. Sheets; third, Mrs. J. H. Watson.

Doe One Year Old and Under Two—First, N. Bartholomew; second, Mrs. J. H. Watson.

Doe Under One Year—First, Mrs. J. H. Watson; second, N. Bartholomew.

GRADE NUBIAN.

Doe Two Years Old or Over—First, N. Bartholomew.
Doe Under One Year—First, N. Bartholomew.

MISCELLANEOUS.

Common Native Goats Judged From Point of Milk Production, Doe Any Age—First, N. Bartholomew; second and third, Geo. Brideson.

Goat Giving Most Milk in Twenty-four Hours During Fair Week—First, N. Bartholomew; second, Mrs. J. H. Watson.

POULTRY AND PET STOCK DEPARTMENT.

SUPERINTENDENT ....V. G. WARNER, Bloomfield, Iowa

Judges....................	F. H. SHELLABARGER, West Liberty JOSEPH DOYLE, Richland J. C. JOHNSON, Bridgeton, Mo. C. S. GIBSON, Detroit, Mich. (Pet Stock)

AMERICAN.

EXHIBITORS—Peter Hove, Stanhope; Oscar Bock, Council Bluffs; Adolph Ruchti, Newton; E. E. Black, Corydon; J. A. Mason, Carlisle; W. G. Andrew, Bondurant; James H. Johnson, Central City; Earl Wiggins, Prairie City; Blue Ribbon Poultry Farm, Altoona; John R. Patterson, Boone; E. W. Collins, Mt. Pleasant; L. J. Schuster, Des Moines; John Peterson, Randolph; C. F. Stoughton, Cambridge, Ill.; E. R. Worst, Muscatine; John C. Ingwersen, Mt. Pleasant; F. W. Johnson, Monroe; Bert C. Holmes, Muscatine; W. J. Duncan, Winfield; M. G. Weaver, Lewis; Dale Porter, Des Moines; Ivan R. Hardin, Mountain Lake, Minn.; F. F. Warner & Sons, Bloomfield; F. L. Reinhard & Son, Ottumwa; A. L. Anderson, Indianola; Beatrice Mansfield, Altoona; L. F. Olson, Des Moines; Oscar Bock, Council Bluffs; F. E. Fifield, Woodbine; J. H. Dwight, Des Moines; P. H. Thiel, Renwick; John E. Hull, Des Moines; Roy D. Brown, Sheffield; G. F. Wisecup, Woodward; J. B. Thomas, Hampton; F. F. Howlett, Des Moines; Dana Wagner, Des Moines; F. C. Krueger, Charles City; C. O. Merrell, New Virginia; Henry L. Jones, Gladbrook; Fred Bell, Boone; M. L. Jones, Gladbrook.

AWARDS.

Sweepstakes, Cockerel—(1), Peter Hove.

Sweepstakes, Pullet—(14), Oscar Bock.

Plymouth Rock Flocks—First (3-16-20-22-23-24-26-27-29-30), Adolph Ruchti.

Barred Plymouth Rock Cock, Cockerel Bred—First, (4), E. E. Black; second, (6), J. A. Mason; third, (453), W. G. Andrew.

Barred Plymouth Rock Cockerel, Cockerel Bred—First, (7), James H. Johnson; second, (30), Carl Wiggins; third, (10), James H. Johnson.

Barred Plymouth Rock Hen, Cockerel Bred—First, (12), Carl Wiggins; second, (7), J. A. Mason; third, (881), James H. Johnson.

Barred Plymouth Rock Pullet, Cockerel Bred—First, (6), Carl Wiggins; second, (34), John R. Patterson; third, (19), James H. Johnson.

Barred Plymouth Rock Pen Fowls, Cockerel Bred—First, (34-49-27-26-45), Carl Wiggins; second, (81-11-28-45-10-64), C. W. Collins; third, (77-82-83-80-84), Blue Ribbon Poultry Farm.

Barred Plymouth Rock Pen Chicks, Cockerel Bred—First, (29-24-92-93-5), Carl Wiggins; second, (60-61-62-63-64), E. E. Black; third, (32-33-14-82-65), E. W. Collins.

Barred Plymouth Rock Cock, Pullet Bred—First, (996), John Peterson; second, (90), L. J. Schuster; third, (45), Adolph Ruchti.

Barred Plymouth Rock Cockerel, Pullet Bred—First, (999), John Peterson; second, (1000), John Peterson; third, (997), John Peterson

Barred Plymouth Rock Hen, Pullet Bred—First, (21), Adolph Ruchti; second, (92), L. J. Schuster; third, (95), J. L. Schuster.

Barred Plymouth Rock Pullet, Pullet Bred—First, (263), John Peterson; second, (265), John Peterson; third, (70), John R. Patterson.

Barred Plymouth Rock Pen Fowls, Pullet Bred—First, (993-203-211-237-262), John Peterson.

White Plymouth Rock Cock—First, (190), C. F. Stoughton; second, (164), C. F. Stoughton; third, (25), E. R. Worst.

White Plymouth Rock Cockerel—First, (166), C. F. Stoughton; second, (170), C. F. Stoughton; third, (20), Blue Ribbon Poultry Farm.

White Plymouth Rock Hen—First, (189), C. F. Stoughton; second, (194), C. F. Stoughton; third, (5), John C. Ingiverson.

White Plymouth Rock Pullet—First, (197), C. F. Stoughton; second, (14), Blue Ribbon Poultry Farm; third, (72), F. W. Johnson.

White Plymouth Rock Pen Fowls—First, (110-12-8-24-14), John C. Ingiversen.

White Plymouth Rock Pen Chicks—First, (59-156-162-153-163), C. F. Stoughton.

Buff Plymouth Rock Cock—First, (80), Bert C. Holmes; second, (2), Peter Hove; third, (61), Blue Ribbon Poultry Farm.

Buff Plymouth Rock Cockerel—First, (1), Peter Hove; second, (107) W. J. Duncan; third, (101), W. J. Duncan.

Buff Plymouth Rock Hen—First, (71), E. E. Black; second, (92), Peter Hove; third, (62), Blue Ribbon Poultry Farm.

Buff Plymouth Rock Pullet—First, (91), Peter Hove; second, (28), M. G. Weaver; third, (37), M. G. Weaver.

Buff Plymouth Rock, Pen Fowls—First, (65-66-77-25), E. E. Black; second, (27-24-17-87-86), Peter Hove; third, (1-2-3-4-5), Dale Porter.

Buff Plymouth Rock, Pen Chicks—First, (194-127-191-197-167), W. J. Duncan; second, (12-46-25-88-96), Peter Hove; third, (6-7-8-9-10), Dale Porter.

Partridge Plymouth Rock Cock—First, (2), Ivan R. Hardin; second, (26), E. R. Worst.

Partridge Plymouth Rock Cockerel—First, (4), Ivan R. Hardin.

Partridge Plymouth Rock Hen—First, (113), Ivan R. Hardin; second, (27), E. R. Worst; third, (28), E. R. Worst.

Partridge Plymouth Rock Pullet—First (3), Ivan R. Hardin; second, (48), Ivan R. Hardin; third, (48), Ivan R. Hardin.

Silver Wyandotte Cock—First, (13585), Bert G. Holmes; second, (63), F. E. Warner; third, (52), Blue Ribbon Poultry Farm.

Silver Wyandotte Cockerel—First, (60), F. F. Warner; second, (62), F. F. Warner.

Silver Wyandotte Hen—First, (19), Blue Ribbon Poultry Farm; second, (79619), Bert G. Holmes; third, (59), F. F. Warner.

Silver Wyandotte Pullet—First, (58), F. F. Warner; second, (15), F. W. Johnson, third, F. L. Reinhard & Son.

Silver Wyandotte, Pen Fowls—First, (56-57-55-61-54), F. F. Warner.

Silver Wyandotte, Pen Chicks—First, (40-41-42-43-47), F. F. Warner.

Golden Wyandotte Cock—First (262), A. L. Anderson; second, (89), E. R. Worst; third, (52), F. F. Warner.

Golden Wyandotte Cockerel—First, (258), A. L. Anderson; second, (267), A. L. Anderson; third, (67), Blue Ribbon Poultry Farm.

Golden Wyandotte Hen—First, (251), A. L. Anderson; second, (46), Warner & Son; third, (90), E. R. Worst.

Golden Wyandotte Pullet—First, (260), A. L. Anderson; second, (277), A. L. Anderson; third, (279), A. L. Anderson.

Golden Wyandotte, Pen Fowls—First, (269-270-263-252-258), A. L. Anderson; second, (255-257-253-265-275), A. L. Anderson; third, (93-99-74-87-86), Blue Ribbon Poultry Farm.

Golden Wyandotte, Pen Chicks—First, (280-284-282-287-278), A. L. Anderson; second, (291-261-274-266-271), A. L. Anderson.

White Wyandotte Cock—First (87), Beatrice Mansfield; second, (1), L. F. Olson third, (10), Oscar Bock.

White Wyandotte Cockerel—First, (11), Oscar Bock; second, L. F. Olson.

White Wyandotte Hen—First, (320), Beatrice Mansfield; second, (390), Beatrice Mansfield; third, (12) Oscar Bock.

White Wyandotte Pullet—First, (14), Oscar Bock; second, (13), Oscar Bock; third, (325), Beatrice Mansfield.

White Wyandotte, Pen Fowls—First, (15-16-17-18-19), Oscar Bock.

White Wyandotte Pen Chicks—First (20-21-22-23-24), Oscar Bock; second, (79-380-382-383-386), Beatrice Mansfield; third, (6-7-8-9-10), L. F. Olson.

Buff Wyandotte Cock—First, (86), E. R. Worst; second, (100), Blue Ribbon Poultry Farm; third (85), E. R. Worst.

Buff Wyandotte Hen—First (8), F. F. Warner; second, (8), E. R. Worst; third, (78), Blue Ribbon Poultry Farm.

Buff Wyandotte, Pen Fowls—First (90-69-74-60-56), Blue Ribbon Poultry Farm.

Partridge Wyandotte Cock—First (92), E. R. Worst; second, (97), Burt C. Holmes; third, (165), F. E. Fifield.

Partridge Wyandotte Cockerel—First, (483), F. E. Field; second, (487), F. E. Field; third, (92), Burt C. Holmes.

Partridge Wyandotte Hen—First, (94), E. R. Worst; second, (46), Burt C. Holmes; third, (498), F. E. Fifield.

Partridge Wyandotte Pullet—First, (500), F. E. Fifield; second, (480), F. E. Fifield; third (79), Burt C. Holmes.

Silver Penciled Wyandotte Cock—First, (50), F. F. Warner; second, (15), Blue Ribbon Poultry Farm; third, (95), E. R. Worst.

Silver Penciled Wyandotte Hen—First, (83), E. R. Worst; second, (45), F. F. Warner; third, (13), Blue Ribbon Poultry Farm.

Silver Penciled Wyandotte Pullet—First, (48), F. F. Warner; second, (44), F. F. Warner.

Columbian Wyandotte Cock—First (29), Blue Ribbon Poultry Farm.

Columbian Wyandotte Hen—First, (37), Blue Ribbon Poultry Farm.

Mottled Java Hen, (82), E. R. Worst.

Single Comb Rhode Island Red Cock—First, (76), Burt C. Holmes; second, (8), J. H. Dwight; third, (19), P. H. Thiel.

Single Comb Rhode Island Red Cockerel—First, (81), J. E. Hull; second, (53), Roy D. Brown; third, (124), G. F. Wisecup.

Single Comb Rhode Island Red Hen—First, (74), J. B. Thomas; second, (1), J. H. Dwight; third, (199), F. F. Howlett.

Single Comb Rhode Island Red Pullet—First, (22), J. B. Thomas; second, (11), Dana Wagner; third, (196), F. F. Howlett.

Single Comb Rhode Island Red Fowls—First, F. L. Reinhard & Son.

Single Comb Rhode Island Red, Pen Chicks—First, (192-193-194), F. F. Howlett; second, (121-118-190), G. F. Wisecup; third, (7-8-9-10-2), Dana Wagner.

Rose Comb Rhode Island Red Cock—First, (78-a-16), F. C. Krueger; second, (91), Roy D. Brown; third, (16-a-16), F. C. Krueger.

Rose Comb Rhode Island Red Cockerel—First (25), Roy D. Brown; second, (4), C. O. Merrell; third, (26), M. L. Jones.

Rose Comb Rhode Island Red Hen—First, (33), Fred Bell; second, (60), Roy D. Brown; third, (59), M. L. Jones.

Rose Comb Rhode Island Red Pullet—First, (1a-16), F. C. Krueger; second, (43), Roy D. Brown; third, (6), C. O. Merrell.

Rose Comb Rhode Island Red, Pen Fowls—First, (31-a-16-81-a-16-91-a-16-27-a-16-46-a-16), F. A. Krueger.

Rose Comb Rhode Island Red, Pen Chicks—First, (41-a-16-28-a-16-44-a-16-49-a-16-43-a-16), F. C. Krueger.

ASIATIC.

EXHIBITORS—Weir Hart, Bondurant; E. R. Worst, Muscatine; F. W. Johnson, Monroe; Blue Ribbon Poultry Farm, Altoona; R. E. West, Altoona; W. Patterson, Carlisle; C. E. Wicklund, Marshalltown.

AWARDS.

Sweepstakes, Cockerel—(96), Weir Hart.

Sweepstakes, Pullet—(60), E. R. Worst.

Flock—First, (87-86-100-32-28-44-38-27-30-95-99), Weir Hart.

Light Brahma Cock—First, (17), F. W. Johnson; second, (57), E. R. Worst; third, (39), Blue Ribbon Poultry Farm.

Light Brahma Cockerel—First, (21), F. W. Johnson; second, (370), Weir Hart; third, (58), E. R. Worst.

Light Brahma Hen—First, (89), Weir Hart; second, (359), Weir Hart; third, (59), E. R. Worst.

Light Brahma Pullet—First, (60), E. R. Worst; second, (83), Weir Hart; third, (22), F. W. Johnson.

Light Brahma, Pen Fowls—First, (54-17-87-39-98), Weir Hart.

Light Brahma, Pen Chicks—First, (96-360-358-361-362), Weir Hart.

Dark Brahma Cock—First, (97), Burt C. Holmes; second, (61), E. R. Worst.

Dark Brahma Hen—First, (75), Burt C. Holmes; second, (62), E. R. Worst.

Buff Cochin Hen—First, (65), E. R. Worst; second, (22), Blue Ribbon Poultry Farm; third, (64), E. R. Worst.

Buff Cochin, Pen Fowls—First, (20-15-24-12-18), Blue Ribbon Poultry Farm.

Buff Cochin, Pen Chicks—First, (16-21-3-10-20), Blue Ribbon Poultry Farm.

Partridge Cochin Hen—First, (64), Blue Ribbon Poultry Farm.

Partridge Cochin, Pen Fowls—First, (1-7-11-5-23), Blue Ribbon Poultry Farm.

Buff Cochin Cockerel—First, (66), E. R. Worst.

Black Cochin Hen—First, (68), E. R. Worst; second, (67), E. R. Worst.

Black Cochin Pullet—First, (69), E. R. Worst.

Black Langshan Cock—First, ((70), E. R. Worst; second, (1), R. E. West.

Black Langshan Cockerel—First, (1), W. Patterson; second, (352), Weir Hart; third, (8), C. E. Wicklund.

Black Lanshan Hen—First, (73), E. R. Worst; second, (2), R. E. West; third, (72), E. R. Worst.

Black Langshan Pullet—First, (3), W. Patterson; second, (42), C. E. Wicklund; third, (82), C. E. Wicklund.

White Langshan Cock—First, (74), E. R. Worst; second, (47), Weir Hart.

White Langshan Cockerel—First, (372), Weir Hart; second, (353), Weir Hart.

White Langshan Hen—First, (75), E. R. Worst; second, (56), Weir Hart; third, (34), Weir Hart.

White Langshan Pullet—First, (100), Weir Hart; second, (93), Weir Hart.

MEDITERRANEAN.

EXHIBITORS—Bert C. Holmes, Muscatine; C. R. Hopkins, Osage; C. R. Joslin, Holstein; Mrs. H. Hoskins, Fairfield; W. O. Coon, Des Moines; Leslie Pruter, West Side; W. Patterson, Carlisle; B. H. Lunnon, Des Moines; F. L. Reinhard & Son, Ottumwa; Anthony Stocker, Des Moines; Blue Ribbon Poultry Farm, Altoona; Mrs. C. D. Hunt, Des Moines; Hyperion White Leghorn Farm, Des Moines; Victor Berglund, Des Moines; R. M. Vifquain, Washington; O. F. Ingle, Bondurant; E. R. Worst, Muscatine; C. E. Wicklund, Marshalltown.

Sweepstakes, Cockerel—Bert C. Holmes.

Sweepstakes, Pullet—C. R. Hopkins.

Flock—First, (33-48-47-80-58-78-79-72-63-67-83), C. J. Joslin; second, (1-2-3-4-5-6-7-8-9-10-11), Mrs. H. Hoskins.

Single Comb Brown Leghorn Cock—First, (118), W. O. Coon; second, (125), W. O. Coon; third, (1), Leslie Pruter.

Single Comb Brown Leghorn Cockerel—First, (93), Bert C. Holmes; second, (9), W. Patterson; third, (6), W. Patterson.

Single Comb Brown Leghorn Hen—First, (10), B. H. Lunnon; second, (2), B. H. Lunnon; third, (3), B. H. Lunnon.

Single Comb Brown Leghorn Pullet—First, (64), Bert C. Holmes; second, (20), B. H. Lunnon; third, (19), B. H. Lunnon.

Single Comb Brown Leghorn, Pen Fowls—First, (116-103-111-104-112), W. O. Coon; second, (3-4-5-8-6), B. H. Lunnon; third, (20-4-1-8-21), W. O. Coon.

Single Comb Brown Leghorn, Pen Chicks—First, (4-5-7-8-9), B. H. Lunnon; second, (3-4-5-6-7), Leslie Pruter; third, (7-6-3-22-23), W. O. Coon.

Rose Comb Brown Leghorn Cock—First, (88), C. J. Joslin; second, F. L. Reinhard & Son.

Rose Comb Brown Leghorn Cockerel—First, (82), C. J. Joslin.

Rose Comb Brown Leghorn Hen—First, (61), C. J. Joslin.

Rose Comb Brown Leghorn Pullet—First, (97), C. J. Joslin.

Single Comb White Leghorn Cock—First, (8400), C. R. Hopkins; second, (10), Anthony Stocker; third, (33), Blue Ribbon Poultry Farm.

Single Comb White Leghorn Cockerel—First, (8401), C. R. Hopkins; second, (11), Mrs. C. D. Hunt; third, (10), Mrs. C. D. Hunt.

Single Comb White Leghorn Hen—First, (8), Mrs. C. D. Hunt; second, (18), Hyperion White Leghorn Farm; third, (7), Mrs. C. D. Hunt.

Single Comb White Leghorn Pullet—First, (8444), C. R. Hopkins; second, (8445), C. R. Hopkins; third, (30) Blue Ribbon Poultry Farm.

Single Comb White Leghorn Pen Fowls—First, (8500-8446-8447-8541-8448), C. R. Hopkins; second, (20-21-22-23-24), Hyperion White Leghorn Farm.

Single Comb White Leghorn Pen Chicks—First, (1-2-3-4-5), Victor Berglund; second, (9-10-15-11-25), R. M. Vifquain.

Rose Comb White Leghorn Cockerel—First, (78) Blue Ribbon Poultry Farm; second, (73), Blue Ribbon Poultry Farm.

Rose Comb White Leghorn Pullet—First, (3), Blue Ribbon Poultry Farm.

Rose Comb White Leghorn Pen Fowls—First, (13-8-79-58-51), Blue Ribbon Poultry Farm.

Rose Comb White Leghorn, Pen Chicks—First, (75-61-66-68-70), Blue Ribbon Poultry Farm.

Single Comb Buff Leghorn Cock—First, (3), O. E. Ingle.

Single Comb Buff Leghorn Cockerel—First (19), H. Hoskins; second (50), Blue Ribbon Poultry Farm.

Single Comb Buff Leghorn Hen—First, (30) H. Hoskins; second, (6), O. E. Ingle; third, (5) O. E. Ingle.

Single Comb Buff Leghorn Pullet—First (17), H. Hoskins; second (18), H. Hoskins; third, (32), Blue Ribbon Poultry Farm.

Single Comb Buff Leghorn Pen Fowls—First, (15-16-17-20-21), O. E. Ingle; second, (10-11-12-13-14) O. E. Ingle.

Single Comb Buff Leghorn Pen Chicks—First (12-13-14-15-16), Mrs. H. Hoskins; second, (22-23-24-29-30), O. E. Ingle.

Single Comb Black Leghorn Cock—First, (52), E. R. Worst; second, (53), E. R. Worst.

Single Comb Black Leghorn Cockerel—First, (54), E. R. Worst.

Single Comb Black Leghorn Hen—First, (55) E. R. Worst; second, E. R. Worst.

Single Comb Black Leghorn Pullet—First, (56), E. R. Worst.

Rose Comb Black Minorca Hen—First, F. L. Reinhard & Son.

Single Comb White Minorca Cock—First, (7), Blue Ribbon Poultry Farm.

Single Comb White Minorca Cockerel—First, (18), Blue Ribbon Poultry Farm.

Single Comb White Minorca Hen—First, (19), Blue Ribbon Poultry Farm.

Single Comb White Minorca Pullet—First, (5), Blue Ribbon Poultry Farm.

Mottled Ancona Cock—First, F. L. Reinhard & Son; second, (16), Blue Ribbon Poultry Farm.

Mottled Ancona Cockerel—First, (12) Blue Ribbon Poultry Farm.

Mottled Ancona Hen—First, (17), Blue Ribbon Poultry Farm.

Mottled Ancona Pullet—First, (14), Blue Ribbon Poultry Farm.

Campine Silver Cock—First, (8), Blue Ribbon Poultry Farm.

Campine Silver Cockerel—First, (25), C. E. Wicklund; second, (4), Blue Ribbon Poultry Farm.

Campine Silver Hen—First, (23), Blue Ribbon Poultry Farm; second, F. L. Reinhard & Son.

Campine Silver Pullet—First, (21), C. E. Wicklund; second, (18), C. E. Wicklund; third, (2), Blue Ribbon Poultry Farm.

ENGLISH.

Exhibitors—F. L. Reinhard & Son, Ottumwa; B. J. Moore, Dunlap; John Ulrich, Pella; E. R. Worst, Muscatine; A. B. Porter, Mt. Pleasant; O. M. Brown, Slater; H. F. Farrar, Ames; Cal Freel, Runnells; H .D. Dow, Davenport; R. C. Roup & Son, Ames; Griffith Brothers, Des Moines; Blue Ribbon Poultry Farm, Altoona.

AWARDS.

Sweepstakes, Cockerel—F. L. Reinhard & Son.

Sweepstakes, Pullet—B. J. Moore.

Flock—First, (14-97-84-29-34-73-74-93-19-96-98-68), John Ulrich.

Rose Comb Red Cap Hen—First, (30), E. R. Worst; second, (31), E. R. Worst.

Speckled Sussex Cockerel—First, (17), A. B. Porter; second, (39), A. B. Porter; third, (40), A. B. Porter.

Speckled Sussex Pullet—First, (10), A. B. Porter; second, (31), A. B. Porter; third, (36), A. B. Porter.

Single Comb Buff Orpington Cock—First, (30), O. M. Brown; second, (b-7400-m), H. F. Farrar; third, (27), B. J. Moore.

Single Comb Buff Orpington Cockerel—First, (28), B. J. Moore; second, (7), O. M. Brown; third, (W-0895), H. F. Farrar.

Single Comb Buff Orpington Hen—First, (162), Cal Freel; second, (38), O. M. Brown; third, (636), H. C. Dow.

Single Comb Buff Orpington Pullet—First, (30), B. J. Moore; second, (3), O. M. Brown; third, (29), B. J. Moore.

Single Comb Buff Orpington Pen Fowls—First, (35-39-74-587-46), Cal Freel.

Single Comb Buff Orpington Pen Chicks—First, (51-52-53-54-55), R. C. Roup; second, (31-32-33-34-35), B. J. Moore; third, (W-898-WO-899-WO-691-WO-791-WO-787), H. F. Farrar.

Single Comb Black Orpington Cock—First, (41), O. M. Brown; second, (36), O. M. Brown; third, (34), E. R. Worst.

Single Comb Black Orpington Cockerel—First, F. L. Reinhard & Son; second, (18), O. M. Brown.

Single Comb Black Orpington Hen—First, (34), E. R. Worst; second, (49), O. M. Brown; third, (44), O. M. Brown.

Single Comb Black Orpington Pen Fowls—First, (37-40-46-28-43), O. M. Brown.

Single Comb White Orpington Cock—First, (37), E. R. Worst; second, (15), W. H. Dunn; third, (72) Griffith Brothers.

Single Comb White Orpington Cockerel—First, (14), Blue Ribbon Poultry Farm; second, (50), John Ulrich; third, (52), John Ulrich.

Single Comb White Orpington Hen—First, (3), John Ulrich; second, (4), Blue Ribbon Poultry Farm; third, (74), Griffith Brothers.

Single Comb White Orpington Pullet—First, (25), Blue Ribbon Poultry Farm; second, (28), Griffith Brothers.

Single Comb White Orpington Pen Chicks—First, (61-67-69-73-74) Griffith Brothers.

Single Comb Blue Orpington Hen—First, (38), Blue Ribbon Poultry Farm.

Dark Cornish Cock—First, (38), E. R. Worst; second, (39), E. R. Worst; third, (11), Blue Ribbon Poultry Farm.

Dark Cornish Hen—First, (40), E. R. Worst; second, (10), Blue Ribbon Poultry Farm.

Dark Cornish Pullet—First, (42), E. R. Worst.

White Cornish Cock—First, (43), E. R. Worst; second,, (44), E. R. Worst.

White Cornish Hen—First, (45), E. R. Worst; second, (46), E. R. Worst.

DUTCH.

Exhibitors—Blue Ribbon Poultry Farm, Altoona; E. R. Worst, Muscatine.

Awards.

Silver Spangled Hamburg Cock—First, (1), Blue Ribbon Poultry Farm; second, (47), E. R. Worst.

Silver Spangled Hamburg Hen—First, (48), E. R. Worst; second, (6), Blue Ribbon Poultry Farm.

Black Hamburg Hen—First, (49), E. R. Worst.

FRENCH.

Exhibitors—Bert C. Holmes, Muscatine.

Awards.

Mottled Houdan Cock—First, (12), Bert C. Holmes.

Mottled Houdan Hen—First, (1), Bert C. Holmes.

GAMES.

Exhibitors—Frank Harris, Des Moines.

Awards.

Black Breasted Red Game Bantam Cock—First, (37), Frank Harris; second, (3), Frank Harris.

Black Breasted Red Game Bantam Cockerel—First, (44), Frank Harris; second, (100), Frank Harris.

Black Breasted Red Game Bantam Hen—First, (1), Frank Harris; second, (4), Frank Harris.

Black Breasted Red Game Bantam Pullet—First, (25), Frank Harris; second, (31), Frank Harris.

ORNAMENTAL GAMES AND BANTAMS.

EXHIBITORS—F. L. Reinhard & Son, Ottumwa; Frank Harris, Des Moines; Fred Bell, Boone.

AWARDS.

Golden Seabright Cock—First, (63), F. L. Reinhard; second, (98), F. L. Reinhard.

Golden Seabright Cockerel—First, (69), F. L. Reinhard.

Golden Seabright Hen—First, (81), F. L. Reinhard & Son; second, (68), F. L. Reinhard & Son.

Golden Seabright Pullet—First, (100), F. L. Reinhard & Son; second, (81), F. L. Reinhard & Son.

Black Rose Comb Cock—First, (3), Frank Harris; second, (4), Frank Harris.

Black Rose Comb Cockerel—First, (65), Frank Harris; second, (51), Frank Harris.

Black Rose Comb Hen—First, (97-R), Frank Harris; second, (3), Frank Harris.

Black Rose Comb Pullet—First, (15), Frank Harris; second, (10), Frank Harris.

Buff Cochin Cock—First, (82), Bert C. Holmes; second, (50), Waldo Pence.

Buff Cochin Cockerel—First, (67), F. L. Reinhard & Son; second, (59), F. L. Reinhard & Son.

Buff Cochin Hen—First, (88), F. L. Reinhard & Son; second, (65), F. L. Reinhard & Son.

Buff Cochin Pullet—First, (59), F. L. Reinhard & Son; second, (80), F. L. Reinhard & Son.

White Cochin Cock—First, (33), Griffith Brothers.

White Cochin Hen—First, (58), Griffith Brothers.

Black Cochin Cock—First, (9), Mrs. Frank Harris.

Black Cochin Hen—First, (8), Mrs. Frank Harris; second, (89), F. L. Reinhard & Son.

CAPONS.

EXHIBITORS—C. D. Warren, Altoona.

AWARDS.

Any Variety Capons—First, (12), C. D. Warren.

PIGEONS.

EXHIBITORS—Dana Wagner, Des Moines; F. L. Reinhard & Son, Ottumwa.

AWARDS.

Pair Fantail Pigeons—First, (41), Dana Wagner; second, (10-3) Dana Wagner.

TURKEYS.

EXHIBITORS—Griffith Brothers, Des Moines; Weir Hart, Bondurant.

AWARDS.

Bronze Turkeys—First, (66), Weir Hart; second, (94), Griffith Brothers.

DUCKS.

EXHIBITORS—Griffith Brothers, Des Moines; Chester L. Mason, Early; F. F. Warner & Sons, Bloomfield; R. E. West, Altoona; Mrs. C. D. Hunt, Des Moines; O .W. Ott, Hoopole, Ill.

AWARDS.

White Pekin Old Drake—First, (11), F. F. Warner & Sons; second, (23), Chester L. Mason; third, (96), Griffith Brothers.

White Pekin Young Drake—First, (1), Chester L. Mason; second, (12), F. F. Warner & Sons.

White Pekin Old Duck—First, (15), F. F. Warner; second, (9), Chester L. Mason; third, (89), Griffith Brothers.

White Pekin Young Duck—First, (13), Chester L. Mason.

Black Cayuga Old Drake—First, (4), R. E. West.

Black Cayuga Old Duck—First, (20), R. E. West.

Colored Muscovy Old Drake—First, (3), R. E. West.

Colored Muscovy Old Duck—First, (4), R. E. West.

White Muscovy Old Drake—First, (5), R. E. West.

White Muscovy Old Duck—First, (63), R. E. West.

Fawn and White Indian Runner Old Drake—First, F. L. Reinhard & Son; second, (8), Mrs. C. D. Hunt.

Fawn and White Indian Runner Young Drake—First, F. L. Reinhard & Son; second, (32), W. O. Ott; third, (5), Mrs. C. D. Hunt.

Fawn and White Indian Runner Old Drake—First, (7), Mrs. C. D. Hunt; second, (30), W. O. Ott; third, F. L. Reinhard & Son.

Fawn and White Indian Runner Young Duck—First, F. L. Reinhard & Son; second, (31), W. O. Ott; third, (3), Mrs. C. D. Hunt.

White Indian Runner Old Drake—First and second, F. L. Reinhard & Son.

White Indian Runner Young Drake—First and second, F. L. Reinhard & Son.

White Indian Runner Old Duck—First and second, F. L. Reinhard & Son.

White Indian Runner Young Duck—First, F. L. Reinhard & Son.

GEESE.

EXHIBITORS—Griffith Brothers, Des Moines; R. E. West, Altoona; W. O. Ott, Hoopole, Illinois; O. C. Bierma, Altoona; Oscar L. Bock, Council Bluffs; F. L. Reinhard, Ottumwa.

AWARDS.

Gray Toulouse Old Gander—First, (7), R. E. West; second, (65), W. O. Ott; third, (64), Griffith Brothers.

Gray Toulouse Young Gander—First, (63), W. O. Ott; second, (68), Griffith Brothers.

Gray Toulouse Old Gander—First, (25), W. O. Ott; second, (61), Griffith Brothers.

Gray Toulouse Young Geese—First, (28), W. O. Ott; second, (65), Griffith Brothers.

White Embden Old Gander—First, (94), O. C. Bierma; second, (464), O. C. Bierma; third, (36), Oscar L. Bock.

White Embden Old Goose—First, (94), O. C. Bierma; second, (85), O. C. Bierma; third, (38), Oscar L. Bock.

White Chinese Old Gander—First and second, F. L. Reinhard & Son.

White Chinese Young Gander—First and second, F. L. Reinhard & Son.

White Chinese Old Goose—First and second, F. L. Reinhard & Son.

White Chinese Young Goose—First and second, F. L. Reinhard & Son.

RABBITS.

Exhibitors—Wm. Foy, Valley Junction; A. R. McGlothlen, Des Moines; G. E. Thornton, Des Moines; L. James, Des Moines; D. E. Kinney, Des Moines; Wm. J. Scott, Des Moines; Russell Lundgren, Des Moines; Wister & Rhodes, Des Moines; W. A. Yerkes, Houston, Texas; L. Jones, Des Moines; Albert Beatty, Valley Junction; A. E. Sprague, Marshalltown; F. W. Mason, Des Moines; D. D. Dolan, Des Moines; Allen Brothers, Des Moines; A. L. Irwin, Des Moines; N. B. Nickle, Des Moines; J. L. Armstrong, Zearing.

Awards.

Angora Senior Doe—First, Wm. Foy, Valley Junction.

Belgian Hares, Senior Buck—First, A. R. McGlothlen.

Belgian Hare, Senior Doe—First, (9), A. A. McGlothlen;: second, (t-1), G. E. Thornton; third, (6), A. R. McGlothlen.

Belgian Hare, Junior Buck—First (4), A. R. McGlothlen; second, (38-m), W. A. Yerkes; third, (4-8-v), Frank Harris.

Belgian Hare, Junior Doe—First (41), D. E. Kinney; second, (4-8-F), A. R. McGlothlen; third, (3-8-t), Frank Harris.

Flemish Giants, Dark Steel Gray Senior Buck—First, G. E. Thornton.

Flemish Giants, Dark Steel Gray Senior Doe—First, (749), Albert E. Beatty.

Flemish Giants, Dark Steel, Gray Junior Buck—First, (19), A. E. Sprague; second, (17), A. E. Sprague; third, (1), Albert E. Beatty.

Flemish Giants, Dark Steel Gray Junior Doe—First, (569), D. E. Keeney; second, (16), A. E. Sprague; third, (Y), W. A. Yerkes.

Flemish Giants, Gray Junior Buck—First, (2), Albert Beatty.

Flemish Giants, Black Senior Doe—First, (20), A. E. Sprague; second, (18), A. E. Sprague.

American Checkered Giants Junior Buck—First, (121), A. E. Sprague.

Himalayans Junior Buck—First, (5), Russell Lundgren; second, (4), Russell Lundgren; third, (6), Russell Lundgren.

Himalayans Junior Doe—First, (3), Russell Lundgren; second, (2), Russell Lundgren; third, (1), Russell Lundgren.

New Zealands Senior Buck—First, (4602-5), Wister & Rhoades; second, (A4V); F. W. Mason; third, (4798), Wm. J. Scott.

New Zealands Senior Doe—First, (5), Allen Bros.; second, (4638), A. L. Irwin; third, (4613), Wm. J. Scott.

New Zealands Junior Buck—First, (11-Y), W. A. Yerkes; second, (3), Wm. Foy; third, (4613), A. L. Irwin.

New Zealands Junior Doe—First, (A-1), F. W. Mason; second, (5), W. A. Yerkes; third, (2), J. L. Armstrong.

White Polish Senior Doe—First, (T-3), G. E. Thornton.

BABY HEALTH CONTEST.

Babies From Rural Districts.

Boy Twelve Months and Under Twenty-four Months Old—

		Score
1.	J. Ernest Breeding, St. Charles	94.8
2.	Vernon Avaux, Urbandale	94.3
3.	James Burton Codlin, Dallas Center	92.1
4.	Homer A. Dippold, Ankeny	91.3

Boy Twenty-four Months and Under Thirty-six Months Old—

1.	Donald Fletcher Youtz, Des Moines	94.3
2.	Darrel E. Freberg, Des Moines	94.2

3.	Marion Wm. Keil, Ankeny	94.1
4.	John Hoisford Hoover, Grinnell	93.4

Girl Twelve Months and Under Twenty-four Months Old—

1.	June Ellsworth, Colfax	93.6
2.	Delma M. Snider, Bondurant	92.7
3.	Gail M. Gifford, Altoona	91.9
4.	Dorothy Bess Wiedenman, Des Moines	91.7

Girl Twenty-four Months and Under Thirty-six Months Old—

1.	Grace A. Reeves, Altoona	94.9
2.	Ethra Jean Cahow, Greenfield	94.5
3.	Grace Louise Peitzman, Grimes	94.2
4.	Vera L. King, Indianola	93.9

Babies From Cities and Towns Less Than Ten Thousand.

Boy Twelve Months and Under Twenty-four Months Old—

1.	Edward H. Scott, Nevada	96.2
2.	John W. Lauder, Grinnell	95.1
3.	Durwood J. Smith, Newton	94.9
4.	John T. Pennington, Dexter	94.6

Boy Twenty-four Months and Under Thirty-six Months Old—

1.	Freeman A. McLaughlin, Schaller	95.1
2.	Robert Ellis Schultz, Ankeny	94.5
3.	Dean Ralph Chamberlain, Woodward	93.5
4.	Hira V. Dickerson, Knoxville	93.3

Girl Twelve Months and Under Twenty-four Months Old—

1.	Mary Jane Erwin, Cambridge	96.7
2.	Eloise E. Gripp, Afton	95.7
3.	Jean Louise Macklin, Coon Rapids	95.3
4.	Louise Kinnick, Adel	94.9

Girl Twenty-four Months and Under Thirty-six Months Old—

1.	Martha Jean Roberts, Adel	96.9
2.	Marjorie Alice Walter, Victor	94.8
3.	Mary Florence Comstock, Auburn	94.7
4.	Ellen Louise Marsh, Lehigh	94.6

Babies From Cities Over Ten Thousand.

Boy Twelve Months and Under Twenty-four Months Old—

1.	Emmet Holland Rowe, Des Moines	95.4
2.	Delmar Stuart Mitchell, Des Moines	94.5
3.	Russell Comber Doolittle, Jr., Des Moines	94.3
4.	James Hillis Downing, Des Moines	93.9

Boy Twenty-four Months and Under Thirty-six Months Old—

1.	Mark Conkling, Jr., Des Moines	96.3
2.	Scott Crowley, Des Moines	95.6
3.	William Clifford Marquis, Des Moines	94.7
4.	Robert W. Trowbridge, Des Moines	93.5

Girl Twelve Months and Under Twenty-four Months Old—

1.	Lela Claire Hauge, Des Moines	94.8
2.	Dorothy Jeanne Rowe, Des Moines	94.5

3.	Esther Lucille Musselman, Des Moines	93.8
4.	Lucile Seeburger, Des Moines	93.7

Girl Twenty-four Months and Under Thirty-six Months Old—

1.	Grace LaVona Allen, Des Moines	94.5
2.	Mary O'Neill, Des Moines	94.1
3.	Ruth M. Hunsicker, Des Moines	93.8
4.	Jean Marie Corey, Des Moines	93.7

CHAMPIONSHIPS.

Most Perfect Girl Twelve Months to Thirty-six Months Old—

Martha Jean Roberts, Adel 96.9

Most Perfect Boy Twelve Months to Thirty-six Months Old—

Mark Conkling, Jr., Des Moines 96.3

IMPROVEMENT CLASS.

BABIES FROM RURAL DISTRICTS.

Boy Twenty-four Months and Under Thirty-six Months Old—

		Gain from 1917.
1.	John Hoisford Hoover, Grinnell	9.
2.	Wm. Jacob Randolph, Ankeny	1.3
3.	Donald F. Youtz, Des Moines	.9

Girl Twenty-four Months and Under Thirty-six Months Old—

1.	Helen G. Miller, Swan	2.2
2.	Gretchen E. Smith, Altoona	2.05
3.	Grace A. Reeves, Altoona	1.5
4.	Grace L. Peitzman, Grimes	1.2

BABIES FROM CITIES AND TOWNS LESS THAN TEN THOUSAND.

Boy Twenty-four Months and Under Thirty-six Months Old—

1.	John W. Woods, Mitchellville	1.7
2.	Freeman A. McLaughlin, Schaller	.8

Girl Twenty-four Months and Under Thirty-six Months Old—

1.	Kathryn Betty O'Neill, Colfax	4.5
2.	Marjorie Alice Walter, Victor	3.5
3.	Mary F. Comstock, Auburn	2.8
4.	Loretta Elizabeth Deiling, Dallas Center	1.

BABIES FROM CITIES OVER TEN THOUSAND.

Boy Twenty-four Months and Under Thirty-six Months Old—

1.	Mark Conkling, Jr., Des Moines	5.6
2.	Wm. C. Marquis, Des Moines	2.6
3.	Joseph E. Borg, Des Moines	1.15
4.	Clyde Brand, Des Moines, Robert F. Winans, Des Moines	1.

Girls Twenty-four Months and Under Thirty-six Months Old—

1.	Virginia M. Anderson, Des Moines	4.1
2.	Mary O'Neill, Des Moines	3.3
3.	Ruth M. Hunsicker, Des Moines	3.1
4.	Mary E. Sinclair, Des Moines	2.3

CHAMPIONSHIPS.

Boy Showing Greatest Improvement Over Last Year—

John Hoisford Hoover, Grinnell ..... 9.

Girl Showing Greatest Improvement Over Last Year—

Kathryn Betty O'Neill, Colfax 4.5

AGRICULTURAL DEPARTMENT

SUPERINTENDENT—H. O. WEAVER, Wapello.

JUDGES..................P. C. TAFF, Ames; L. C. BURNETT, Ames.

NORTH CENTRAL DISTRICT.

FIELD CORN.

W. H. PLOWS, Chariton; VICTOR FELTER, Council Bluffs.

NORTHERN DISTRICT.

Ten Ears, Yellow—First, J. Fred Brunk, Sheldon.

Ten Ears, White—First, R. B. Brown, Inwood; second, Edwin R. Maudsley, Burt.

Single Ear Yellow—First, J. Fred Brunk; second, A. B. Schenk, Algona.

Single Ear, White—First, Edwin R. Maudsley; second, R. B. Brown.

NORTH CENTRAL DISTRICT.

Ten Ears, Yellow—First, W. J. Irving, Webster City; second, H. E. Brown, Salix; third, L. Emanuel Peterson, Harcourt; fourth, J. W. Bennett, Janesville; fifth, P. M. Peterson, Cherokee.

Ten Ears, White—First, W. J. Irving; second, L. Emanuel Peterson; third, J. W. Eral, Fort Dodge; fourth, Eral Bros., Pocahontas; fifth, Wm. Peterson, Gowrie; sixth, P. M. Peterson; seventh, E. B. Glenny, Union.

Single Ear, Yellow—First, M. J. Irving; second, H. E. Brown; third, E. B. Glenny; fourth, P. M. Peterson; fifth, L. Emanuel Peterson.

Single Ear, White—First, E. B. Glenny; second, L. Emanuel Peterson; third, W. J. Irving; fourth, Wm. Peterson; fifth, J. W. Eral; sixth, P. M. Peterson.

SOUTH CENTRAL DISTRICT.

Ten Ears, Yellow—First, I. E. Proudfoot, Altoona; second, Marion Coppock, Ankeny; third, John Justice, Ankeny; fourth, Wm. Steenwyck, Mitchellville; fifth, W. F. Otcheck, Grinnell; sixth, Fred McCullough, Victor, Iowa; seventh, Chas. A. Brunker, Blencoe; eighth, E. L. Pearson, Mitchellville; ninth, Matt Baker, Mitchellville; tenth, J. C. Eggert, Newton, Iowa.

Ten Ears, White—First, John Finnigan, Monteith; third, Matt Baker; fourth, Henry George, West Union; fifth, Wm. Danner, Dallas Center; sixth, John Justice.

Single Ear, Yellow—First, Matt Baker; second, E. L. Pearson; third, Fred McCullough; fourth, Wm. Steinwick; fifth, Chas. A. Brunker; sixth, Ralph Ebersold, Ankeny; seventh, Marion Coppock; eighth, Carl Holden, Williamsburg; ninth, John Justice; tenth, I. E. Proudfit.

Single Ear, White—First, John Finnigan; second, W. F. Otcheck; third, Matt Baker; fourth, Wm. Danner; fifth, Henry George.

SOUTHERN DISTRICT.

Ten Ears, Yellow—First, Krizer Bros., Eddyville; second, N. H. Kriser, Rose Hill; third, Joe Patterson, Rose Hill; fourth, Walter Reynolds, Rose Hill; fifth, Victor Pierrott, Weater; sixth, J. A. Mason, Carlisle; seventh, Earl Meyer, Van Meter; eighth, Ernest Rebb, Burlington; ninth, S. A. Shetterly, Hartford; tenth, Amos Baily & Sons, Unionville.

Ten Ears, White—First, S. A. Shetterley; second, Krizer Bros.; third, Wayne N. Polk, Sidney; fourth, Ernest Rebb; fifth, N. H. Krizer; sixth, D. C. Bakehouse & Sons, Sigourney; seventh, Amos Baily & Sons; eighth, Joe Patterson; ninth, S. M. Cart, Swan.

Single Ear, Yellow—First, J. A. Mason, Carlisle; second, K. H. Krizer; third, Amos Baily & Sons; fourth, Victor Pierott; fifth, Krizer Bros.; sixth, Walter Reynolds; seventh, Earnest Rebb; eighth, Joe Patterson; ninth, Earl Meyer; tenth, Elmer Reed, Mt. Pleasant.

Single Ear, White—First, Wayne N. Polk; second, D. C. Bakehouse; third, Earnest Rebb; fourth, Krizer Bros.; fifth, N. H. Krizer; sixth, F. L. Reinhard; seventh, S. A. Shetterly; eighth, Amos Baily.

Northern And North Central District.

Ten Ears Other Than Yellow or White—First, P. M. Peterson; second, R. F. Donovan; third, Henry George.

Single Ear Other Than Yellow or White—First, P. M. Peterson; second, L. Emanuel Peterson; third, Wayne W. Polk; fourth, R. F. Donovan; fifth, Henry George.

South Central And Southern District.

Ten Ears Other Than Yellow or White—First, Guy Coon, Carlisle; second, Gerald Coon, Carlisle; third, Raymond Hethershaw, Des Moines; fourth, P. M. Parsons, Carlisle; fifth, G. W. Coon, Carlisle.

Single Ear Other Than Yellow or White—First, John Justice; second, Ray Nichols, Earlham; third, Raymond Hethershaw; fourth, Guy Coon; fifth, Gerald Coon.

Sweepstakes.

Ten Ears, Yellow—First, Krizer Bros.

Ten Ears White—First, S. A. Shetterly.

Ten Ears Other Than Yellow or White—First, P. M. Peterson.

Single Ear Yellow—First, J. A. Mason.

Single Ear White—First, John Finnigan.

Single Ear Other Than Yellow or White—First, John Justice.

Grand Sweepstakes.

Ten Ears Any Variety—First, Krizer Bros.

Single Ear, Any Variety—First, J. A. Mason.

SWEET CORN AND POP CORN.

Ten Ears Small Early Sweet Corn—First, Raymond Heathershaw, Des Moines; second, Grace Heathershaw, Des Moines; third, Dwight Clark, Albia; fourth, J. E. Cornwell, Ankeny; fifth, C. L. Cornwell, Ankeny.

Ten Ears Late Sweet Corn—First, J. L. Todd, Des Moines; second, W. F. Otcheck, Des Moines; third, Clark Bros., Albia; fourth, J. U. Walker, Swan; fifth, Howard C. Todd, Des Moines.

Ten Ears White Rice Pop Corn—First, J. L. Todd; second, Chas. A. Brunker; third, Ray Redfern, Yarmouth; fourth, Grace Heathershaw; fifth, Dwight Clark.

Ten Ears Any Other Variety Pop Corn—First, Raymond Heathershaw; second, Grace Heathershaw; third, J. L. Watson, Panora; fourth, Dwight Clark; fifth, J. L. Todd.

GRAIN AND SEEDS.

Winter Wheat—First, W. F. Otcheck; second, Carl Holden; third, B. F. Howard; fourth, Ray Redfern; fifth, Fred McCullough; sixth, Paul Peters, Ankeny.

Spring Wheat—First, E. M Wilson, Panora; second, John Frush, Pleasantville; third, J. W. Friel, Pleasantville; fourth, Guy Coon, Carlisle; fifth, Paul Peters; sixth, Elmer Reed.

Small Early Oats—First, Ray Redfern; second, Edwin R. Maudslay; third, Carl Holden; fourth, L. Emanuel Peterson; fifth, J .T. Wasson, Panora; sixth, G. P. Klein, Altoona.

Swedish Type Oats—First, Fred McCullough; second, W. F. Otcheck; third, W. J. Irving fourth, L. Emanuel Peterson; fifth, Elmer Reed.

Silvermine Oats—First, Ray Redfern; second, S. H. Stamm, Orillia; third, W. F. Otcheck; fourth, Elmer Reed; fifth, Paul Peters; sixth W. S. Matthews.

Large, Colored Oats—First, D. N. Bruns; second, Elmer Reed; third, W. F. Otcheck; fourth, Edwin Ballou; fifth, J. T. Wasson; sixth, W. S. Matthews.

Rye—First, J. W. Friel; second, Chas. M. Puck, Des Moines; third, J. T. Wasson; fourth, Ray Redfern.

Barley—First, E. M. Wilson; second, W. F. Otcheck; third, O. H. Nau, Middletown; fourth, Ray Redfern; fifth, Elmer Reed.

Speltz—First, J. T. Wasson; second, E. M. Wilson; third, Edwin Ballou.

Buckwheat—First, Anna J. Grinstead, Mitchellville; second, J. F. Hall; third, W. F. Clements; fourth, Ed Stewart, Adelphi.

Timothy Seed—First, Ray Redfern; second, W. F. Otcheck; third, Carl Holden; fourth, C. E. Malone; fifth, Ed. Stewart.

Red Clover Seed—First, Carl Holden; second, D. N. Bruns; third, E. M. Wilson; fourth, Matt Baker; fifth, Frank Williams, Prairie City.

Millet Seed—First, D. N. Bruns; second, Willis S. Matthews; third, W. F. Otcheck; fourth, J. F. Hall.

Flax Seed—First, Ed. Stewart; second, E. M. Wilson; third, J. T. Wasson.

GRASS AND FORAGE.

Timothy Sheaf (Hay)—First E. M. Wilson; second, J. T. Wasson; third, Edwin Ballou.

Red Top Sheaf (Hay)—First, J. T. Wasson; second, W. F. Otcheck; third, F. L. Reinhard.

Medium Red Clover Sheaf (Hay)—First, Ray Redfern; second, Edwin Ballou; third, E. M. Wilson.

Mammouth Red Clover Sheaf (Hay)—First S. H. Stamm; second, F. L. Reinhard; third, S. A. Shetterley.

Alsike Clover Sheaf (Hay)—First, F. L. Reinhard; second, W. S. Matthews; J. U. Walker.

Millet Sheaf (Hay)—First, W. F. Otcheck; second, W. S. Matthews; third, A. L. Plummer, Adelphi.

Blue Grass Sheaf (Hay)—First, F. L. Reinhard; second, J. A. Mason; third, S. A Shetterly

SHEAF GRAIN

Wheat in Straw (Spring)—First, Elmer Reed; second, W. F. Otcheck; third, E. M. Wilson; third, J. T. Wasson.

Wheat in Straw (Winter)—First, Elmer Reed; second, W. F. Otcheck; third, J. U. Walker; fourth, C. E. Malone.

Barley in Straw—First, J. W. Freel; second, S. H. Stamm; third, W. F. Otcheck; fourth, Elmer Reed.

Oats in Straw (Early)—First, Ray Redfern; second, Carl Holden; third, W. S. Matthews; fourth, Fred McCullough.

Oats in Straw (Late)—First, Elmer Reed; second, Ray Redfern; third, S. H. Stamm; fourth, W. F. Otcheck.

Rye in Straw—First, W. F. Otcheck; second, F. M. Perran; third, F. L. Reinhard; fourth, J. A. Mason.

Flax for Seed—First, E. M. Wilson; second, W. F. Otcheck; third, Edwin Ballou; fourth, Ray Redfern.

Ripe Millet for Seed—First, J. T. Wasson; second, Edwin Ballou; third, W. F. Matthews; fourth, E. M. Wilson.

Speltz—First, W. F. Otcheck; second, C. E. Malone; third, W. S. Matthews; fourth, J. W. Freel.

Timothy Sheaf (for Seed)—First, Ray Redfern; second, Carl Holden; third, Fred McCullough; fourth, E. M. Wilson.

Blue Grass Sheaf (Seed)—First, W. F. Otcheck; second, Ray Redfern; third, W. S. Matthews; fourth, J. U. Walker.

POTATOES.

Potatoes (Early Variety)

Early Ohio—First, N. M. Chambers, Malvern; second, W. E. Utterback, Sigourney; third, Chas. M. Puck; fourth, Elmer Reed; fifth, James Heathershaw; sixth, Arthur Wright, Des Moines.

Bliss Triumph—First, Sestier Bros., Des Moines; second, Elmer Reed; third, Chas. M. Puck.

Beauty to Hebron—First, W. F. Otcheck; second, Chas. M. Puck; third, Jas. Heathershaw; fourth, Clark Bros.

Mid Season Irish Cobbler—First, W. E. Utterback; second, Wilford McClanahan, Mitchellville; third, Sestier Bros.; fourth, Elmer Reed; fifth, C. H. True, Edgewood; sixth, Jas. Heathershaw.

Maggie Murphy—First, W. E. Utterback; second, Sestier Bros.; third, Chas. M. Puck; fourth, Elmer Reed.

Blue Victor—First, Sestier Bros.; second, Chas. M. Puck; third, J. T. Wasson; fourth, A. L. Plummer.

Late Bonanza—First, W. E. Utterback; second, W. F. Otcheck; third, Sestier Bros.; fourth, Chas. M. Puck.

Rural New Yorker—First, W. E. Utterback; second, Jas. Heathershaw; third, W. F. Otcheck; fourth, S. B. Whinnery, Des Moines; fifth, Sestier Bros.; sixth, Chas. M. Puck.

Seneca Beauty—First, W. E. Utterback; second, Sestier Bros; third, B. Stewart, Des Moines; fourth, W. F. Otcheck; fifth, Elmer Reed.

Miscellaneous, Collection to Consist of at Least Ten Varieties—First, W. E. Utterback; second, Chas. M. Puck; third, Jas. Heathershaw; fourth, Sestier Bros.; fifth, W. F. Otcheck.

Any Meritorious Variety, Limited to Ten Varieties—First, W. E. Utterback; second, Edwin Ballou; third, Chas. M. Puck.

SWEET POTATOES.

Red Jersey—First, Jas. Heathershaw; second, Sestier Bros.

Yellow Jersey—First, Sestier Bros.; second, Jas. Heathershaw; third, Chas. M. Puck.

White—First,Jas. Heathershaw; second, Chas. M. Puck; third, Sestier Bros.

FIELD OR STOCK VEGETABLES.

Beets, White Half Sugar (Three Specimens)—First, Jas. Heathershaw; second, J. E. Cornwell; third, A. L. Plummer.

Beets, Mangel Wertzels—First, Jas. Heathershaw; second, Cyrus E. Harvey; third, A. L. Plummer.

Beets, Golden Tankard—First, Jas. Heathershaw; second, Chas. M. Puck; third, J. U. Walker.

White Carrots for Stock (Six Specimens)—First, Sestier Bros.; second, Jas. Heathershaw; third, A. L. Plummer.

Pumpkins, Ripe Field (Two Specimens)—First, A. L. Plummer; second, Ed. Stewart; third, Clyde L. Stewart.

Rutabagas for Stock (Six Specimens)—First, A. L. Plummer; second, Sestier Bros.; third, J. U. Walker.

Squash for Stock (Two Specimens)—First, C. W. Packer, Adelphi; second, Sestier Bros.; third, Cyrus E. Harvey.

Turnips for Stock (Six Specimens)—First, Jas. Heathershaw; second, Chas. M. Puck; third, Sestier Bros.

Largest Pumpkin—First, A. L. Plummer; second, Clyde L. Stewart; third, Jas. Heathershaw.

Largest Squash—First, C. W. Packer; second, Sestier Bros.; third, Jas. Heathershaw.

Largest White Carrot—First, Sestier Bros.; second, Jas. Heathershaw; third, A. L. Plummer.

Largest Beet, Mangel Wertzel—First, A. L. Plummer; second, Jas. Heathershaw; third, Cyrus E. Harvey.

Largest Turnip—First, Erma Hunt, Carlisle; second, Chas. M. Puck; third, J. U. Walker.

Largest Rutabaga—First, Sestier Bros.; second, A. L. Plummer; third, Jas. H. Heathershaw.

Peppers, Green Mango—First, Sestier Bros.; second, Cyrus E. Harvey; third, Jas. Heathershaw.

Peppers, Red Mango—First, Sestier Bros.; second, Cyrus E. Harvey; third, Chas. M. Puck.

Peppers, Red—First, Sestier Bros.; second, Cyrus E. Harvey; third, Chas. M. Puck.

Peppers, Red Cayenne—First, Sestier Bros.; second, Chas. M. Puck; third, Jas Heathershaw.

Pumpkin, Ripe Sweet—First, Ed. Stewart; second, Erma Hunt; third, Clyde L. Stewart.

Rhubarb, for Table Use—First, Cyrus E. Harvey; second, Sestier Bros.; third, Chas. M. Puck.

Squash, Boston Marrow—First, Sestier Bros.; second, Jas. Heathershaw; third, Chas. M. Puck.

Squash, Crook Neck—First, Cyrus E. Harvey; second, Sestier Bros.; third, Griffith Bros., Des Moines.

Squash, Essex Hybrid—First, Sestier Bros.; second, Jas. Heathershaw; third, Chas. M. Puck.

Squash, Sibley—First, Sestier Bros.; second, Jas. Heathershaw; third, Chas. M. Puck.

Tomatoes, Red—First, Cyrus E. Harvey; second, Chas. M. Puck; third, J. L. Todd.

Tomatoes, Purple—First, J. L. Todd; second, Cyrus E. Harvey; third, Clark Bros.

Tomatoes, Yellow—First, Jas. Heathershaw; second, Cyrus E. Harvey; third, J. L. Todd.

Tomatoes, Largest, Any Variety—First, Cyrus E. Harvey; second, Jas. Heathershaw; third, Sestier Bros.

Watermelons—First, Cyrus E. Harvey; second, Jas. Heathershaw; third, Sestier Bros.

DISPLAY.

Onions—First, W. F. Otcheck; second, Sestier Bros.; third, A. L. Plummer.

Tomatoes—First, Jas. Heathershaw; second, Chas. M. Puck; third, Sestier Bros.

Peppers—First, Jas. Heathershaw; second, Cyrus E. Harvey; third, Sestier Bros.

VEGETABLE SWEEPSTAKES.

First, Sestier Bros.; second, Jas. Heathershaw; third, Cyrus E. Harvey; fourth, W. E. Utterback; fifth, J. L. Todd.

INDIVIDUAL FARM EXHIBIT.

Farms Containing 80 Acres or Less—First, J. T. Wasson; second, C. E. Malone; third, W. F. Lyon; fourth, F. L. Reinhard.

Farm, Over 80 Acres—First, W. S. Mathews; second, E. M. Wilson; third, W. F. Otcheck; fourth, J. A. Mason; fifth, J. W. Freel; sixth, J. U. Walker; seventh, P. M Peterson

Exhibit Within Polk County—First, Chas. O. Garrett; second, O. A. Decker; third, Harold Justice; fourth, J. E. Cornwell.

COUNTY EXHIBITS.

North Central District—First, Buena Vista county.

South Central District—First, Guthrie County; second, Polk County.

Southern District—First, Cass County; second, Marion County; third, Wayne county.

Sweepstakes—First, Guthrie County.

Most Attractive and Best Decorated—First, Cass County; second, Buena Vista County; third, Guthrie County; fourth, Polk County; fifth, Marion County; sixth, Wayne County.

VEGETABLE ROOT CROP.

Red Globe Onions (One Dozen)—First, Sestier Bros.; second, Beaver Ridge Garden, Grimes; third, Cyrus E. Harvey.

White Globe Onions—First, Sestier Bros.; second, W. F. Otcheck; third, Cyrus E. Harvey.

Yellow Globe Onions—First, Sestier Bros.; second, A. L. Plummer; third, Cyrus E. Harvey.

Twelve Largest Onions—First, Clark Bros.; second, Sestier Bros.; third, Chas. M. Puck.

Best One Dozen Onions Not Named Above—First, Chas. M. Puck; second, Jas. Heathershaw; third, Clyde L. Stewart.

Turnips, One-Half Dozen—First, Chas. M. Puck; second, Jas. Heathershaw; third, Cyrus E. Harvey.

Rutabagas Turnips, One-Half Dozen, Yellow Flesh—First, Sestier Bros.; second, Jas. Heathershaw; third, Chas. M. Puck.

Parshnips, One-Half Dozen—First, W. F. Otcheck; second, Sestier Bros.; third, W. McClanahan.

Carrots, for Table Use—First, M. F. Simms; second, Jas. Heathershaw; third, Clarence Holihan.

Commercial Sugar Beets—First, Jas. Heathershaw; second, J. U. Walker; third, Sestier Bros.

Beets for Table Use—First, J. L. Todd; second, Jas. Heathershaw; third, Ralph Grant.

Vegetable Oysters—First, J. L. Todd; second, Clark Bros.; third, Jas. Heathershaw.

TABLE VEGETABLES.

One Quart Shelled Ground Cherries—First, M. F. Simms; second, W. McClanahan.

Beans, Polled Lima Shelled—First, Cyrus E. Harvey; second, Chas. M. Puck; third, Sestier Bros.

Beans, Henderson's Bush Lima, Shelled—First, Cyrus E. Harvey; second, A. L. Plummer; third, J. L. Todd.

Beans, White Navy—First, B. Stewart; second, Mrs. Frank Stewart; third, Cyrus E. Harvey.

Cabbage, Early Jersey Wakefield—First, W. McClanahan; second, J. L. Todd; third, Chas. M. Puck.

Cabbage, Late Flat—First, Anna J. Grinstead; second, Sestier Bros.; third, Cyrus E. Harvey.

Cabbage, Red—First, Chas. M. Puck; second, Sestier Bros.; third, J. L. Todd.

Cabbage Savoy—First, Sestier Bros.

Cabbage, Three Heaviest Heads—First, Sestier Bros.; second, Jas. Heathershaw; third, Cyrus E. Harvey.

Cabbage, Round—First, Jas. Heathershaw; second, Cyrus E. Harvey; third, Sestier Bros.

Cauliflower—First, Jas. Heathershaw; second, Chas. M. Puck; third, Sestier Bros.

Cucumbers, Ripe—First, Sestier Bros; second, Chas. M. Puck; third, Jas. Heathershaw.

Cucumbers for Slicing—First, Sestier Bros.; second, Cyrus E. Harvey; third, Jas. Heathershaw.

Celery, Red—First, Sestier Bros.

Celery, White—First, Beaver Ridge Garden; second, Sestier Bros.

Egg Plant—First, Cyrus E. Harvey; second, Sestier Bros.; third, J. L. Todd.

Kohl Rabbi—First, Cyrus E. Harvey; second, Chas. M. Puck; third, Sestier Bros.

Musk Melons, Green Flesh—First, Sestier Bros.; second, Jas. Heathershaw; third, Chas. M. Puck.

Musk Melons, Salmon Flesh—First, Orville Foster, Carlisle; second, W. E. Pickering; third, Sestier Bros.

PANTRY DEPARTMENT

Superintendent—H. O. Weaver, Wapello.

BREAD, ETC.

Judges..............................Mrs. J. K. Barlow, Des Moines.
F. Eric Miller, Ames.

Loaf Yeast Bread (One-Third Other Than Wheat Flour)—First, Mrs. Frank Huston, Waukee; second, E. L. Thompson, Des Moines; third, Mrs. J. A. Peters, Ankeny; fourth, Ferne Botsford, Des Moines; fifth, Mrs. Cyrus E. Harvey, Altoona.

Loaf Salt Rising Bread (One-Third Potato Flour)—First, Mrs. S. I. Stocker, Des Moines; second, Mrs. Cyrus E. Harvey; third, Anna B. Frost, Des Moines.

Loaf Graham Bread—First, Mrs. E. M. Sinclair, Des Moines; second, Mrs. Frank Huston; third, Mrs. F. H. Sinclair; fourth, Mrs. Asa Lee, Mitchellville; fifth, Mrs. J. A. Peters, Ankeny.

Loaf Nut Bread—First, Dr. C. F. Spring, Des Moines; second, Mrs. J. A. Peters third, Mrs. I. F. Dunlap, Altoona; fourth, Mable Van Horn, Adelphi; fifth, Mrs. E. M. Sinclair.

Loaf Entire Wheat Bread—First, Mrs. F. H. Sinclair; second, Mrs. E. M. Sinclair; third, E. L. Thompson, Des Moines; fourth, Anna J. Grinstead, Mitchellville; fifth, Anna B. Frost, Des Moines.

Pan of Rolls (One-Third Other Than Wheat Flour)—First, Mrs. J. A. Peters, Ankeny; second, Mrs. Frank Huston, Waukee; third, Mrs. F. H. Sinclair; fourth, Mrs. W. C. Raney, Des Moines; fifth, Anna J. Grinstead.

Half Gallon Saratoga Chips—First, Mrs. C. B. Arnold, Des Moines; second, Mrs. J. C. Ash, Des Moines.

WAR BREAD, CAKES AND COOKIES.

Loaf Rye Bread—First, Mrs. J. A. Peters; second, Mrs. O. C. Bierma, Altoona; third, Mrs. F. H. Sinclair; fourth, Mrs. Cyrus E. Harvey.

Loaf Corn Bread—First, Mrs. Andrew Conn, Newton; second, Mrs. J. A. Peters; third, Mrs. S. I. Stocker; fourth, Mrs. Frank Huston.

Loaf Barley Bread—First, Mrs. Andrew Conn, Newton; second, Mrs. F. H. Sinclair; third, F. M. Perran, Adelphi; fourth, Mrs. J. A. Peters.

Loaf Oat Bread—First, Mrs. Asa Lee, Mitchellville; second, Mrs. Frank Huston; third, F. M. Perran; fourth, Mrs. F. H. Sinclair.

Loaf Bread Containing No Wheat Flour—First, Mrs. I. F. Dunlap; second, Mrs. J. A. Peters; third, Mrs. L. P. Schlosser, Colfax; fourth, Mrs. E. M. Sinclair.

Half Dozen Muffins Made of Other Than Wheat Flour—First, Mrs. Frank Huston; second, W. H. Souter, Mitchellville; third, Anna B. Frost.

Loaf Bread Made With Sour Milk and Soda and at Least One-third Flour Other Than Wheat—First, Mrs. June Collins, Bondurant.

Loaf Bread Made Without Wheat Flour—First, Mrs. R. M. Anwyl, Des Moines; second, Mrs. S. B. Barrett, Mitchellville; third, Mrs. Andrew Conn.

Loaf Steamed Brown Bread, No Wheat Flour—First, Mrs. Winnifred Grandquist, Des Moines; second, Mrs. Walter Ellis, Altoona; third, Mary E. Hadley.

Loaf Cake, Not Frosted—First, Mrs. James Grinstead, Mitchellville; second Miss June Collins.

Dark Cake, Not Frosted—First, June Collins; second, Anna B. Frost; third, Mrs. Ella Moat.

Cake Made With Honey—First, Anna B. Frost.

Cookies—Molasses Made From Other Than Wheat Flour—First, Mrs. Frank Huston; second, Francis Miller, Des Moines; third, Mrs. Andrew Conn.

Oat Cookies—First, Mrs. E. M. Sinclair; second, Mrs. James Grinstead; third, Mrs. James Walter.

Nut Drop Cookies, Made at Least in Part From Other Than Wheat Flour—First, Mrs. Robt. Trowbridge; second, Mrs. F. H. Sinclair; third, Fannie McClain, Adelphi.

CAKES NOT FROSTED.

Fruit—First, Anna J. Grinstead; second, E. L. Thompson; third, F. M. Perran.

Pound—First, Jessie Alexander, Indianola; second, Anna B. Frost.

Sponge—First, Anna B. Frost; second, Alice B. Cross, Des Moines; third, Ophelia Miller, Polk City.

Watermelon—First, Jessie Alexander; second, F. M. Perran.

Coffee—First, Anna B. Frost.

Marble—First, Jessie Alexander; second, F. M. Perran.

Angel Food—First, F. M. Perran; second, Mrs. Frank Huston; third, Jessie Alexander.

Sunshine—First, Jessie Alexander; second, F. M. Perran; third, Mrs. Robt. Trowbridge.

Fairy Loaf—First, F. M. Perran; second, Jessie Alexander.

Bride's Cake—First, F. M. Perran; second, Jessie Alexander.

Nut Loaf, White—First, Mrs. Andrew Conn; second, Jessie Alexander; third, F. M. Perran.

Devil's Food—First, Jessie Alexander; second, Crystal Foster, Carlisle; third, F. M. Perran.

White Citron—First, F. M. Perran second, Jessie Alexander; third, Anna B. Frost.

Cocoanut Loaf—First, Jessie Alexander; second, Anna B. Frost.

Currant Loaf—First, Jessie Alexander.

Election Loaf—First, Anna B. Frost; second, Mrs. E. M. Sinclair.

White Fruit—First, Jessie Alexander; second, Anna B. Frost.

Gold Cake—First, F. M. Perran second, Anna B. Frost; third, Jessie Alexander.

Jam Cake—First, Jessie Alexander; second, Anna B. Frost.

Fig White Layer—First, Mrs. S. J. Stocker, Des Moines; second, Anna B. Frost; third, Jessie Alexander.

Fig Dark Layer—First, Jessie Alexander; second, Mrs. James Grinstead.

Jelly Layer—First, Jessie Alexander; second, Anna B. Frost.

Jelly Roll—First, Jessie Alexander; second, Mrs. James Grinstead.

Lemon Jelly—First, Anna B. Frost; second, Jessie Alexander; third, Mrs. Andrew Conn.

Maple—First, Anna B. Frost; second, Jessie Alexander.

Marshmallow—First, Mrs. S. J. Stocker; second, Jessie Alexander.

Nut, Spice—First, F. M. Perran; second, Anna B. Frost.

Orange—First, Mrs. S. J. Stocker; second, Jessie Alexander; third, Mrs. Chas. Walter.

COOKIES, ETC.

One Dozen Sugar—First, Mrs. C. B. Arnold; second, Mrs. Anna Ault, Mitchellville.

One Dozen Cocoanut—First, Mrs. C. B. Arnold.

One Dozen Fruit—First, Mrs. N. D. Tapp, Ft. Des Moines; second, Mrs. O. Smith, Altoona.

One Dozen Nut—First, Fannie McClain, Adelphi.

One Dozen Chocolate—First, Mrs. F. H. Sinclair.

One Dozen Ginger—First, Mrs. S. B. Snyder, Des Moines; second, Mrs. C. B. Arnold.

One Dozen Macaroons—First, Mrs. S. B. Snyder; second, Mrs. E. M. Sinclair.

One Dozen Raised Doughnuts—First, Mrs. Cyrus E. Harvey.

One Dozen Baking Powder Doughnuts—First, Mrs. N. D. Tapp; second, Mrs. Cyrus E. Harvey.

Loaf Hard Gingerbread—First, F. M. Perran; second, Mrs. E. L. Pearson, Mitchellville.

Loaf Soft Gingerbread—First, F. M. Perran; second, Mrs. Frank Huston.

One Dozen Lady Fingers—First, Mrs. S. B. Snyder; second, Mrs. Jessie Alexander.

One Dozen Almond Wafers—First, E. L. Thompson.

CONSERVES.

Currant—First, Mrs. Ella Plummer; second, E. L. Thompson.

Cherry—First, Hazel Plummer; second, Mrs. L. H. Curran.

Gooseberry—First, Anna J. Grinstead; second, Mrs. C. C. McGrew, Des Moines.

Strawberry—First, Mrs. Ella Plummer; second, Mrs. L. H. Curran.

Peach—First, Anna J. Grinstead; second, Hazel Plummer.

Rhubarb—First, Hazel Plummer; second, Anna J. Grinstead.

Orange Marmalade—First, E. L. Thompson; second, Mrs. C. C. McGrew.

SUN PRESERVED FRUIT.

Strawberry Sunshine—First, Mrs. J. M. Henderson, Des Moines; second, Anna J. Grinstead.

Red Raspberry Sunshine—First, E. L. Thompson; second, Mrs. Andrew Conn.

Cherry Sunshine—First, Hazel Plummer; second, E. L. Thompson.

Peach Sunshine—First, R. Thompson; second, Anna J. Grinstead.

PRESERVES.

Apple—First, Hazel Plummer; second, Mrs. Ella Plummer.

Apricot—First, Mrs. Ella Plummer; second, Hazel Plummer.

Cherry—First, Mrs. C. C. McGrew; second, Hazel Plummer.

Crabapple—First, Mrs. C. C. McGrew.

Currant—First, Hazel Plummer; second, Mrs. Ella Plummer.

Citron—First, Mrs. M. D. Tapp; second, Mrs. Fred B. Myers, Ft. Des Moines.

Blackberry—First, Hazel Plummer; second, Mrs. Ella Plummer.

Gooseberry—First, Mrs. E. M. Sinclair; second, Mrs. L. H. Curran.

Black Raspberry—First, Mrs. L. H. Curran; second, Hazel Plummer.

Strawberry—First, Hazel Plummer; second, Mrs. J. M. Henderson.

Peach—First, Anna J. Grinstead; second, Mrs. M. Kastberg, Des Moines.

Pear—First, Mrs. H. F. Martin; second, Mrs. L. H. Curran.

Plum—First, Hazel Plummer; second, Mrs. Ella Plummer.

Quince—First, Mrs. L. H. Curran; second, Mrs. M. Kastberg.

Tomato—First, Fannie McClain; second, Mrs. C. C. McGrew.

Watermelon—First, Anna J. Grinstead; second, E. L. Thompson.

Pineapple—First, Hazel Plummer; second, Mrs. Ella Plummer.

Red Raspberry—First, Hazel Plummer; second, Mrs. G. C. Bullard, Cambridge.

JELLY.

Apple—First, Mrs. C. O. McGrew; second, Mrs. L. H. Curran.

Black Raspberry—First, Mrs. L. H. Curran; second, Mrs. M. Kastberg.

Blackberry—First, Mrs. M. Kastberg; second, Mrs. C. C. McGrew.

Crabapple—First, Mrs. M. Kastberg; second, Mrs. C. C. McGrew

Cherry—First, Mrs. M. Kastberg; second, Mrs. L. H. Curran.

Currant, White—First, Mrs. M. D. Tapp; second, Mrs. C. C. McGrew

Currant, Red—First, Mrs. C. C. McGrew; second, Mrs. L. H. Curran.

Cranberry—First, Mrs. M. Kastberg.

Gooseberry—First, Mrs. M. D. Tapp; second, Mrs. M. Kastberg.

Haw, Red—First, Mrs. M. Kastberg; second, Mrs. Bert A. Brown, Des Moines.

Grape, Dark—First, Mrs. Don Brazleton, Ankeny; second, Mrs. L. H. Curran, Des Moines.

Grape, White—First, Mrs. H. F. Martin; second, Mrs. M. D. Tapp.

Grape, Wild—First, Mrs. L. H. Curran; second, Mrs. F. B. Butterfield, Ankeny.

Pine apple—First, Mrs. M. D. Tapp; second, Mrs. M. Kastberg.

Peach—First, Mrs. H. F. Martin; second, Mrs. M. Kastberg.

Pear—First, Mrs. L. H. Curran; second, Mrs. H. F. Martin.

Plum—First, Mrs. B. O. Spahr, Slater; second, Mrs. M. Kastberg.

Quince—First, Mrs. L. H. Curran; second, Mrs. H. F. Martin.

Rhubarb—First, Mrs. M. Kastberg; second, Mrs. L. H. Curran.

Red Raspberry—First, Mrs. H. F. Martin; second, Mrs. M. Kastberg.

Strawberry—First, Mrs. M. Kastberg; second, Minnie Oberman, Burlington.

BUTTERS.

Apple—First, Mrs. L. H. Curran; second, Mrs. H. F. Martin.

Black Raspberry—First, Anna J. Grinstead; second, Mrs. L. H. Curran.

Cherry—First, Mrs. L. H. Curran; second, Anna J. Grinstead.

Crabapple—First, Mrs. L. H. Curran; second, Mrs. Fred G. Moat.

Currant—First, Mrs. L. H. Curran; second, Anna J. Grinstead.

Gooseberry—First, Anna J. Grinstead; second, Mrs. L. H. Curran.

Grape, Tame—First, Mrs. L. H. Curran; second, Mrs. Fred D. Myers.

Grape, Wild—First, Mrs. M. D. Tapp; second, Mrs. Fred B. Myers.

Peach—First, Mrs. L. H. Curran; second, Mrs. J. B. Stevens, Des Moines.

Plum—First, Mrs. L. H. Curran; second, Mrs. J. B. Stevens.

Pineapple—First, Mrs. L. H. Curran; second, Mrs. C. C. McGrew.

Quince—First, Mrs. L H Curran; second, Mrs. Fred D. Myers.

Red Raspberry—First, Anna J. Grinstead; second, Mrs. Walter Ellis.

Rhubarb—First, Mrs. L. H. Curran; second, Mrs. M. Kastberg.

Strawberry—First, Minnie Oberman.

JAMS.

Apple—First, Mrs. E. M. Sinclair; second, Anna J. Grinstead.

Black Raspberry—First, Mrs. J. C. Ash; second, Mrs. L. H. Curran.

Cranberry—First, Mrs. Ella Plummer; second, Mrs. Anna J. Grinstead.

Pear—First, Anna J. Grinstead; second, Mrs. L. H. Curran.

Plum—First, Mrs. L. H. Curran; second, Hazel Plummer.

Strawberry—First, Mrs. L. H. Curran; second, Anna J. Grinstead.

Quince—First, Mrs. L. H. Curran; second, E. L. Thompson.

Tomato—First, Mrs. L. H. Curran; second, Mrs. E. M. Sinclair.

Tomato Figs—First, Mrs. L. H. Curran; second, Mrs. M. D. Tapp.

SOUR PICKLES, CATSUP AND VINEGAR.

Beet—First, Mrs. C. C. McGrew; second, Anna J. Grinstead.

Bean—First, Mrs. C. C. McGrew.

Cucumber—First, Anna J. Grinstead; second, Mrs. D. F. Hallowell, Ankeny.

Mango—First, Mrs. M. D. Tapp; second, E. L. Thompson.

Onion—First, Mrs. C. C. McGrew; second, Mrs. M. Kastberg.

Tomato—First, Mrs. L. H. Curran; second, Mrs. H. F. Martin.

Mixed—First, Anna J. Grinstead; second, Mrs. M. D. Tapp.

Chow Chow—First, Anna J. Grinstead; second, Mrs. L. H. Curran.

Picalilli—First, Mrs. L. H. Curran; second, Mrs. Fred B. Myers.

Chili Sauce—First, Mrs. L. H. Curran; second, Mrs. M. D. Tapp.

Tomato Catsup—First, Mrs. L. H. Curran; second, Mrs. E. M. Sinclair.

Cucumber Catsup—First, Anna J. Grinstead; second, Mrs. Ella Plummer.

Walnut Catsup—First, Mrs. M. D. Tapp.

Home-made Cider Vinegar—First, Mrs. E. L. Pearson; second, Will F. Clements, Agency.

CANNED GOODS.

Apple—First, Mrs. L. H. Curran; second, Mrs. L. P. Schlosser, Colfax.

Apricot—First, Mrs. C. C. McGrew; second, Mrs. J. A. Peters, Ankeny.

Blackberry—First, Anna J. Grinstead; second, Mrs. C. C. McGrew.

Cherry—First, Mrs. C. C. McGrew; second, Fern Botsford.

Crabapple—First, Mrs. C. C. McGrew; second, Mrs. Lizzie Ritzinger, Sigourney.

Currant, White—First, Mrs. C. C. McGrew; second, Mrs. Andrew Conn.

Currant, Red—First, Mrs. C. C. McGrew.

Dewberry—First, Mrs. C. C. McGrew; second, Mrs. Lizzie Ritzinger.

Gooseberry—First, Mrs. E. M. Sinclair; second, Mrs. J. W. Patrick.

Grapes, White—First, Mrs. Frank Stewart; second, Mrs. Lizzie Ritzinger.

Grapes, Blue—First, Mrs. J. B. Stevens; second, Hazel Plummer.

Ground Cherries—First, Mrs. L. H. Curran.

Peaches—First, Mrs. C. C. McGrew; second, Mrs. Anna Gammon, Valley Junction.

Pears—First, Mrs. C. C. McGrew; second, Mrs. L. H. Curran.

Plums—First, Mrs. C. C. McGrew; second, Mrs. Anna Gammon.

Raspberries, Red—First, Mrs. C. C. McGrew; second, Mrs. Lizzie Ritzinger.

Raspberries, Black—First, Mrs. Ella Plummer; second, Mrs. C. C. McGrew.

Rhubarb—First, Mrs. L. H. Curran; second, Mrs. C. C. McGrew.

Strawberries—First, Mrs. L. P. Schlosser; second, Mrs. Chas. H. Young, Ankeny.

SPICED GOODS.

Apple—First, Mrs. Geo. Carpenter, Ackworth; second, Mrs. M. D. Tapp.

Cherries—First, Mrs. C. C. McGrew; second, Mrs. W. M. Davidson, Ankeny.

Gooseberry—First, Anna J. Grinstead.

Peach—First, Mrs. C. C. McGrew; second, Mrs. E. M. Sinclair.

Pear—First, Mrs. M. Kastberg; second, Anna J. Grinstead.

Plum—First, Mrs. C. C. McGrew; second, Mrs. Ella Plummer.

SWEET PICKLES.

Apples—First, Mrs. L. H. Curran.

Citron—First, Mrs. Fred B. Myers.

Crabapple—First, Mrs. J. W. Patrick; second, Mrs. R. J. Wilkinson.

Cucumber—First, Mrs. H. F. Martin; second, Mrs. F. Rees, Mitchellville.

Peach—First, Mrs. F. H. Sinclair; second, Mrs. E. M. Sinclair.

Pear—First, Mrs. L. H. Curran; second, Mrs. J. W. Patrick.

Watermelon—First, R. Thompson; second, Anna J. Grinstead.

Mixed—First, Anna J. Grinstead; second, Mrs. Ella Plummer.

CANNED VEGETABLES.

Corn—First, Mrs. L. H. Curran; second, Mrs. C. C. McGrew.

String Beans—First, Mrs. Lizzie Ritzinger; second, Mrs. L. P. Schlosser.

Shelled Beans—First, Anna J. Grinstead; second, Mrs. C. C. McGrew.

Peas—First, Kathryn Parsons, Carlisle; second, Mrs. L. H. Curran.

Beets—First, Mrs. C. C. McGrew; second, Mrs. E. W. Freel, Pleasantville.

Other Greens—First, Mrs. Clara W. Watkins; second, Mrs. Alice Seymour, Des Moines.

Asparagus—First, Mrs. C. C. McGrew; second, June Collins.

Tomatoes—First, Mrs. C. C. McGrew; second, Mrs. Ralph Nickels.

Young Carrots—First, Mrs. C. C. McGrew; second, Mrs. L. H. Curran.

Mixed Vegetables for Soup—First, Mrs. C .C. McGrew; second, Anna J. Grinstead.

Pumpkin for Pies—First, Mrs. L. H. Curran; second, Mrs. Robt. Trowbridge.

DRIED VEGETABLES.

Corn—First, Mrs. L. H. Curran; second, Mrs. J. C. Ash.

Peas—First, Minnie Oberman; second, Mrs. C. C. McGrew.

String Beans—First, Mrs. L. P. Schlosser; second, Anna J. Grinstead.

Mixed Vegetables for Soup—First, June Collins; second, Minnie Oberman.

DRIED FRUIT.

Apples—First, Mrs. L. H. Curran; second, Mrs. L. P. Schlosser.

Peaches—First, Mrs. L. H. Curran.

CANNED MEAT.

Beef—First, Mrs. J. A. Peters; second, Mrs. Lee Garfield, Mitchellville.
Fish—First, Francis Miller.

HONEY.

Case White Clover—First, R. H. Longworth, Lake Mills; second, Bert A. Brown.

Case Linden Honey—First, R. H. Longworth.

Case Sweet Clover—First, Bert A. Brown; second, R. H. Longworth.

Case Any Other White Comb—First, Bert A. Brown; second, R. H. Longworth.

Case Buckwheat, Heartease or Any Other Dark Honey—First, Bert A. Brown; second, R. H. Longworth.

Best 300 Pounds Comb Honey—First, Bert A. Brown; second, R. H. Longworth.

Display—First, Bert A. Brown; second, R. H. Longworth.

Most Attractive Display Comb Honey—First, R. H. Longworth; second, Bert A. Brown.

White Clover Extracted Honey in Glass—First, C. H. True; second, Bert A. Brown.

Linden Extracted Honey—First, C. H. True; second, Bert A. Brown.

Sweet Clover Extracted Honey—First, E. H. Longworth; second, Bert A. Brown.

Other White Extracted Honey—First, Bert A. Brown; second, C. H. True; third, R. H. Longworth.

Buckwheat, Heartease or Any Other Extracted Honey—First, R. H. Longworth; second, C. H. True; third, Bert A. Brown.

Granulated Extracted Honey—First, C. H. True; second, R. H. Longworth; third, Bert A. Brown.

Display of Labeled Samples Extracted Honey—First, Bert A. Brown; second, R. H. Longworth.

Most Attractive Display of Extracted Honey—First, Bert A. Brown; second, C. H. True; third, R. H. Longworth.

Honey Vinegar—First, Bert A. Brown; second, R. H. Longworth.

BEES.

Nucleus Golden Yellow Italians and Queen in Observation Hive—First, Bert A. Brown.

Leather Colored Italians and Queen in Observation Hive—First, Bert A. Brown; second, Arthur Wright, Des Moines.

Best Queen Shown in Cage—First, Bert A. Brown; second, Arthur Wright.

Queen Rearing Outfit—First, Bert A. Brown; second, R. H. Longworth.

Most Perfect Brood Combs—First, Bert A. Brown.

Beeswax, 10 Pounds—First, R. H. Longworth; second, Bert A. Brown.

Best Display Cooking or Baking With Honey Instead of Sugar—First, Bert A. Brown; second, Mrs. Cyrus E. Harvey; third, R. H. Longworth.

Exhibit of Beekeepers Associations, Including All Apiary Products and Supplies—First, Polk County Beekeepers Association

Sweepstakes—First, Bert A Brown; second, R. H. Longworth.

BUTTER AND CHEESE AWARDS.

JUDGES .... R. E. CLEMONS, B. O. BROWNLEE.

CREAMERY BUTTER—WHOLE MILK CLASS.

H. W. Fowler, Jesup, Iowa	95¾
A. J. Allenstene, Bremer, Iowa	95½
H. C. Ladage, Strawberry Point	95¼
Carl Hoveland, Lake Mills	95
Chris Russler, Fredericksburg	94½
F. H. Harm, Tripoli	94
W. P. Hughes, Sumner	93½
F. W. Bremer, Sumner	93½
H. C. Stendel Northwood	92
Rich L. Alderson, Plainfield	92
C. J. Meier, Waverly	91½
W. R. Crabb, Greeley	91

Average score of creamery butter whole milk class..............93.5

CREAMERY BUTTER—GATHERED CREAM CLASS.

Albert Fenger, Whittemore	96¼
R. O. Rasmussen, Chrystal Lake	96
W. H. Hilgason, Lone Rock	95
W. M. Matters, Graettinger	95
F. C. Hinsley, Manley	95
August H. Hein, Hull, Iowa	94½
J. H. Bakken, Ridgeway	94
F. D. Warner, Northwood	94
O. A. Jensen, McCallsburg	93½
E. C. Kamoos, Brooklyn	93½
H. H. Jensen, Clarks Grove, Minn.	93
J. O. Ersland, Rockford	93
H. O. Rusley, Leland	93
M. P. Christensen, Algona	93
L. H. Larson, Roland	93
H. J. Wargqwoly, Boyden	92½
Henry Hansen, Graettenger	92½
John Christensen, Little Cedar	92½
C. B. Peterson, Exlra	92½

G. A. Flack, Duncan	91½
F. P. Gernard, Wadena	90½
J. M. Gerken, Story City	90
H. W. Jarchow, Germania	90
O. Addison Fosse, Ridgeway	89
H. C. Whissler, Marengo	88
Carl Lynge, Exira	87
Average score of creamery butter, gathered cream class	92.6

DAIRY BUTTER.

L. F. Randolph, Ankeny	93
A. C. Adamson, Ankeny	92½
Mrs. J. A. Peters, Ankeny	90½
Mrs. Otto Rasmussen, Altoona	90
Mrs. O. O. Lomen, Decorah	90

CHEESE.

H. L. Kalk, Sheboygan Falls, Wis.	94
Rudolph Gerber, Harpers Ferry, Iowa	92

FRUIT DEPARTMENT

SUPERINTENDENT—ELMER REEVES, Waverly.

APPLES.

NORTHERN DISTRICT.

JUDGE.......................................H. E. NICHOLS.

Collection of Not Less Than Twenty Varieties or More Than Fifty—First, C. H. True, Edgewood; second, O. O. Lomen, Decorah; third, Isaac Johnson, West Union; P. M. Peterson, Cherokee.

Four Varieties, Summer—First, O. O. Loman; second, C. H. True; third, Isaac Johnson; third, P. M. Peterson.

Six Varieties, Fall—First, O. O. Lomen; second, C. H. True; third, Isaac Johnson; third, P. M. Peterson.

Six Varieties, Winter—First, C. H. True; second, O. I. Lomen; third, Isaac Johnson; third, P. M. Peterson.

CENTRAL DISTRICT.

Collection, Not Less Than Twenty Varieties or More Than Fifty—First, M. J. Worth, Mondamin; second, E. O. Worth, Mondamin; third, C. W. Worth, Mondamin.

Six Varieties, Fall—First, M. J. Worth; second, E. O. Worth; third, C. W. Worth.

Six Varieties, Winter—First, M. J. Worth; second, C. W. Worth; third, E. O. Worth.

CAPITAL DISTRICT.

Collection, Not Less Than Twenty Varieties or More Than Fifty—First, Cyrus E. Garvey, Altoona; second, Chas. O. Garrett, Des Moines; third, Apple Grove Orchard, Mitchellville; fourth, B. Stewart, Des Moines.

Four Varieties, Summer—First, Cyrus E. Harvey; second, J. A. Green, Beech; third, Chas. O. Garrett; fourth, B. Stuart.

Six Varieties, Fall—First, Chas. O. Garrett; second, Cyrus E. Harvey; third, J. A. Green; fourth, Apple Grove Orchards; fifth, B. Stewart.

Six Varieties, Winter—First, Apple Grove Orchard; second, Cyrus E. Harvey; third, Chas. O. Garrett; fourth, J. A. Green; fifth, B. Stuart.

SOUTHERN DISTRICT.

JUDGE...J. H. ALLISON.....

Collection, Not Less Than Twenty Varieties or More Than Fifty—First, Thos. Enright, Patterson; second, A. R. Soder, Hartford; third, J. F. Wellons, Indianola; fourth, Lenna Gwinn, Swan.

Four Varieties, Summer—First, Thos. Enright; second, A. R. Soder; third, J. F. Wellons; fourth, Faye Gwinn; fifth, Lenna Gwinn

Six Varieties, Fall—First, A. R. Soder; second, Thos. Enrgiht; third, J. F. Wellons; fourth, Lenna Gwinn; fifth, Faye Gwinn.

Six Varieties, Winter—First, Thos. Enright; second, A. R. Soder; third, Faye Gwinn; fourth, Lenna Gwinn; fourth, J. F. Wellons.

HOME GROWN COLLECTION.

JUDGE...R. S. HERRICK.

NORTHERN DISTRICT.

First, C. H. True; second, O. O. Lomen; third, Isaac Johnson.

CENTRAL DISTRICT.

First, M. W. Worth; second, M. J. Worth; third, E. O. Worth.

CAPITAL DISTRICT.

First, Cyrus E. Harvey; second, Apple Grove Orchard; third, Chas. O. Garrett; fourth, B. Stewart.

SOUTHERN DISTRICT.

First, Thos. Enright; second, A. R. Soder; third, J. F. Wellons; fourth, Lenna Gwinn.

PACKAGE COMMERCIAL APPLES.

JUDGES...............................H. E. NICHOLS, R. H. HERRICK.

NORTHERN DISTRICT.

First, O. O. Lomen on two varieties; C. H. True on three varieties; G. E. Frost on one variety.

Second, P. M. Peterson on one variety; O. O. Lomen on two varieties; C. H. True on one variety.

Third, G. E. Frost one one; C. H. True on one.

CENTRAL DISTRICT.

First, C. W. Worth, on four varieties; M. J. Worth, on one; E. O. Worth, on four.

Second, M. J. Worth, on four; C. W. Worth, on four.

Third, E. O. Worth, on three; M. J. Worth, on two.

CAPITAL DISTRICT.

First, Cyrus E. Harvey, on two varieties; J. A. Green, on one; Chas. O. Garrett, on one; Apple Grove Orchard, on five.

Second, Cyrus E. Harvey, on four; Jas. A. Green, on two; Chas. O. Garrett, on one; B. Stuart, on one.

Third, Apple Grove Orchard, on one; Chas. O. Garrett, on three; Cyrus E. Harvey, on three; B. Stewart, on one.

Fourth, Chas. O. Garrett on one; B. Stuart on two.

SOUTHERN DISTRICT.

First, Thos. Patterson on five varieties; A. R. Soder, on one; Lenna Gwinn on one.

Second, A. R. Soder on one; Lenna Gwinn on one; Faye Gwinn on two; J. F. Wellons on two; Thos. Patterson on one.

Third, Lenna Gwinn on three varieties; B. Stuart on one; J. F. Wellon on one.

Fourth, Faye Gwinn on one; J. F. Wellon on one; Lenna Gwinn on one.

APPLES STORED FROM PREVIOUS YEAR.

Best Box of Apples Stored From Last Year's Crop—First, Cyrus E. Harvey; second, A. O. Garrett; third, Thos. Enright.

Best Plate of Each of Five Varieties Stored as Above With Method of Storing Stated, Premium on Each Variety—First Cyrus E. Harvey on two varieties; Chas. O. Garrett on three.

Second, Chas. O. Garrett on two; Cyrus E. Harvey on two; Thos. Enright on one.

UNNAMED SEEDLING APPLES.

Six specimens to Constitute Plate—Third, Cyrus E. Harvey; third, B. Stuart.

Best Exhibit Seedling Apples—Third, Cyrus E. Harvey; fourth, O. O. Lomen.

PLATES.

NORTHERN DISTRICT.

First, Isaac Johnson, on six varieties; O. O. Lomen on thirteen; G. E. Frost on two; C. H. True on nine.

Second, O. O. Lomen on twelve; C. H. True on eleven; Isaac Johnson on six.

Third, M. J. Worth on five; E. O. Worth on seven; C. W. Worth on four; P. M. Peterson on two.

CENTRAL DISTRICT.

First, E. O. Worth on six varieties; C. W. Worth on seven; M. J. Worth on twelve.

Second, C. W. Worth on six; M. J. Worth on eight; E. O. Worth on eleven.

Third, M. J. Worth on five; E. O. Worth on seven; C. W. Worth on twelve.

CAPITAL DISTRICT.

First, Chas. O. Garrett on four varieties; J. A. Green on seven; B. Stuart on five; Cyrus E. Harvey on nine.

Second, J. A. Green on three; Cyrus E. Harvey on five; B. Stuart on four; Chas. O. Garrett on eight; Apple Grove Orchard on four; J. C. Hol, Des Moines, on three.

Third—Cyrus E. Harvey on seven; Chas. O. Garrett on five; J. A. Green on six; Apple Grove Orchard on one; B. Stuart on five.

SOUTHERN DISTRICT.

First, A. R. Soder on seven varieties; Thos. Enright on thirteen; J. F. Wellons on three; Faye Gwinn on three; Lenna Gwinn on three.

Second, Thos. Enright on five J. F. Wellons on three; A. R. Soder on fourteen; Faye Gwinn on four; Lenna Gwinn on one

Third, Faye Gwinn on ten; Thos. Enright on four; J. F. Wellons on eight; A. R. Soder on four.

TWENTY-FIVE PLATE DISPLAY.

NORTHERN DISTRICT.

First, C. H. True; second, O. O. Lomen.

CAPITAL DISTRICT.

First, Apple Orchard; second, Chas. O. Garrett; third, Cyrus E. Harvey; fourth, B. Stuart.

SOUTHERN DISTRICT.

First, Thos. Enright; second, J. F. Wellons; third, A. R. Soder.

CRABS.

SOUTHERN DISTRICT.

First, M. J. Worth on two varieties; E. O. Worth on four; C. W. Worth on one.

Second, E. O. Worth on two; M. J. Worth on four; C. W. Worth on one.
Third, C. W. Worth on five; M. J. Worth on one.

SOUTHERN DISTRICT VARIETY.

First, A. R. Soder on one variety; Thos. Enright on six; J. F. Wellons on one.

Second, Faye Gwinn on one; J. F. Wellons on four; Thos. Enright on one.
Third, J. F. Wellons on one.

NORTHERN DISTRICT.

First, C. H. True on six varieties; O. O. Lomen on one.
Second, O. O. Lomen on three; P. M. Peterson on three; Isaac Johnson on one.

Third, Isaac Johnson on three; C. H. True on one.

CAPITAL DISTRICT.

First, Chas. O. Garrett on four varieties; Cyrus E. Harvey on one; B. Stuart on two; Apple Grove Orchard on one.

Second, Cyrus E. Harvey on three; Chas. O. Garrett on one; B. Stuart on two.

Third, B. Stuart on two; J. C. Hol on one; Cyrus E. Harvey on three; Chas. O. Garrett on one.

PLATE DISPLAY.

Best Ten Plates Wealthy—First, G. E. Frost; second, O. O. Lomen; third, Apple Grove Orchard; fourth, J. F. Wellons; fifth, Cyrus E. Harvey.

Best Ten Plate Exhibit, Each of Three Other Varieties—First, Apple Grove Orchard; second, A. R. Soder; third, Chas. O. Garrett; fourth, Cyrus E. Harvey fifth, J. F. Wellons on Jonathan variety.

First, Chas. O. Garrett second, Apple Grove Orchard; third, Cyrus E. Harvey; fourth, A. R. Soder; fifth, J. F. Wellons, on Grives variety.

First, Apple Grove Orchard; second, Chas. O. Garrett; third, Cyrus E. Harvey; fourth, Cyrus E. Harvey fifth, Chas. O. Garrett, on Northwestern Greening variety.

Sweepstakes—First, Thos. Enright on two varieties; Chas. O. Garrett on one; Apple Grove Orchard on two; M. J. Worth on two; E. O. Worth on one; B. Stuart on one; C. H. True on one.

Second, C. H. True on three; G. E. Frost on one; Faye Gwinn on one; C. W. Worth on one; J. A. Green on one; B. Stuart on one; Thos. Enright on one; M. J. Worth on one.

Third, O. O. Lomen on three; Mrs. M. G. Haines, Des Moines, on two; Apple Grove Orchard on two; Thos. Enright on one; Faye Gwinn on one; C. W. Worth on one.

Fourth, Cyrus E. Harvey on one; M. J. Worth on one; C. W. Worth on one; Thos. Enright on one; G. E. Frost on one; C. W. True on one; Chas. O. Garrett on one; Faye Gwinn on one.

Fifth, B. Stuart on two; Lenna Gwinn on two; Cyrus E. Harvey on two; Chas. O. Garrett on two; Thos. Enright on one; Apple Orchard on one.

DISPLAY OF FRUITS.

First, Chas. O. Garrett; seoond, Cyrus E. Harvey; third, B. Stuart; fourth, J. F. Wells; fifth, A. R. Soder.

ORNAMENTAL DESIGNS IN FRUIT.

JUDGE..WESLEY GREEN.

Best and Most Artistic Basket of Fruit—First, Mrs. Frank Stuart, Des Moines; second, J. F. Wellons; third, Chas. O. Garrett; fourth, Hazel Plummer; fifth, Virgil C. Hougen, McCallsburg; sixth, Anna J. Grinstead, Mitchellville; seventh, Cyrus E. Harvey; eighth, B. Stuart; ninth, Mrs. O. A. Decker, Adelphi; tenth, Faye Gwinn; eleventh, Mrs. Ella Plummer, Des Moines; twelfth, J. L. Todd, Des Moines; thirteenth, J. L. Todd; fourteenth, J. C. Hol fifteenth, A. R. Soder.

PEARS.

JUDGE..S. A. BEACH.

Plates Any Worthy Variety—First, Faye Gwinn on one; J. F. Wellons on three; B. Stuart on two; J. L. Todd on one; A. R. Soder on one.

Second, J. F. Wellons on three; M. J. Worth on two; Cyrus E. Harvey on one; Faye Gwinn on one.

Largest and Best Collection Per Plate Distinct Varieties—First, J. F. Wellons.

GRAPES.

Best and Largest Collection of Grapes, (four bunches to plate)—First, Chas. O. Garrett; Cyrus E. Harvey; third, J. C. Hol.

Pockington—First, Cyrus E. Harvey; second, J. C. Hol.

Concord—First, J. C. Hol.

Worden—First, Mrs. W. M. Riley, Patterson; second, C. H. True.

Delaware—First, Chas. O. Garrett.

Eaton—First, J. C. Hol; second, B. Stuart.

Duchess—First, J. C. Hol.

Moore's Early—First, C. H. True; second, Cyrus E. Harvey.

Moore's Diamond—First, B. Stuart.

Niagara—First, W. A. Pickering, Des Moines; second, Mrs. W. M. Riley.

Agawan—Second, J. C. Hol.

Brighton—First, C. H. True.

Four Bunches Seedling Grapes—First, Cyrus E. Harvey.

PLUMS.

NORTHERN DISTRICT.

Largest and Best Exhibit of Plums, Not Less Than Fifteen Varieties—First, O. O. Lomen; second, Isaac Johnson.

PLATES.

Desoto—First, Isaac Johnson; second, O. O. Lomen.

Forest Garden—First, Isaac Johnson; second, O. O. Lomen.

Hawkeye—First, Isaac Johnson; second, O. O. Lomen.

Wolf—First, Isaac Johnson; second, O. O. Lomen.

Wyant—First, O. O. Lomen; second, Isaac Johnson.

Stoddard—First, O. O. Lomen; second, Isaac Johnson.

Miner—First, Isaac Johnson; second, O. O. Lomen.

Wild Goose—First, O. O. Lomen; second, Isaac Johnson.

Hunt—First, O. O. Lomen; second, Isaac Johnson.

Surprise—First, O. O. Lomen; second, Isaac Johnson.

Terry—First, Isaac Johnson; second, O. O. Lomen.

Lombard—First, Isaac Johnson.

Best Plate of Domestic Plums—Isaac Johnson.

Best Plate Not Named on List Not Exceeding Five Varieties—First, O. O. Lomen on one; Isaac Johnson on one.

Second—Isaac Johnson on one; O. O. Lomen on one.

SOUTHERN DISTRICT.

Largest and Best Exhibit of Plums Not Less Than Fifteen Varieties—First, Chas. O. Garrett; second, Cyrus E. Harvey; third, B. Stuart.

Desoto—First, Chas. O. Garrett; second, Cyrus E. Harvey.

Forest Garden—First, Cyrus E. Harvey; second, Chas. O. Garrett.

Hawkeye—First, Chas. O. Garrett; second, Cyrus E. Harvey.

Wolf—First, Chas. O. Garrett; second, Cyrus E. Harvey.

Wyant—First, Chas. O. Garrett; second, A. R. Soder.

Stoddard—First, Chas. O. Garrett; second, Cyrus E. Harvey.

Miner—First, B. Stuart; second, A. R. Soder.

Wild Goose—First, Cyrus E. Harvey.

Hunt—First, Chas. O. Garrett.

Terry—First, H. Stuart; second, Cyrus E. Harvey.

Lombard—First, Cyrus E. Harvey.

Best Plate Domestic Plum—C. O. Garrett; second, Cyrus E. Harvey.

Best Plate Not Named on List Not Exceeding Five Varieties—First, Chas. O. Garrett on three, Cyrus E. Harvey on two.

Second, Chas. O. Garrett on one; Cyrus E. Harvey on one.

Best Exhibit Domestic Plums—Second, Cyrus E. Harvey.

Best Plate Hybrid or Japan Plums—First and second, Cyrus E. Harvey.

Native Plum Seedlings—First, A. R. Soder; second, Cyrus E. Harvey; third, J. F. Wellons; fourth, Chas. O. Garrett.

NATIVE FRUITS.

PLATES.

Elderberry—First, J. C. Hol; second, B. Stuart.

Wild Black Cherry—First, S. D. Whinnery, Des Moines; second, A. R. Soder.

Fresh Strawberry Progressive—First, J. C. Hol; second, C. E. Harvey.

Fresh Strawberries Other Varieties—First, C. E. Harvey.

Plates, Each Other Native Fruits—First, S. D. Whinnery on two; J. F. Wellons on two; C. E. Harvey on one; W. F. Clements, Agency, on five.

Second, A. R. Soder on one; Mrs. W. M. Riley on two; S. D. Whinnery on one; W. A. Pickering on one.

EDIBLE NUTS GROWN IN IOWA.

Black Walnut—First, W. F. Clements; C. O. Garrett.

White Walnut—First, B. Stuart; second, W. A. Pickering.

Hickory Nut—First, W. F. Clements; second, W. A. Pickering.

Hazel Nuts—First, A. R. Soder; second, S. D. Whinnery.

Sweet Chestnut—First, A. R. Soder; second, B. Stuart.

Peanuts—First, W. F. Clements; second, B. Stuart.

Each Other Nuts Grown in Iowa—First, J. F. Wellons; second, Faye Gwinn.

Best Collection of Nuts—First, W. F. Clements; second, Chas. O. Garrett.

FLORICULTURE

SUPERINTENDENT—WESLEY GREENE, Des Moines.

JUDGES ....JOHN REARDON, ARTHUR H. SMITH.

PLANTS IN POTS.

Collection Plants in Bloom Not Less Than 25 Varieties—Second, Iowa Seed Company, Des Moines; third, Wilson Floral Company, Des Moines.

Collection Foliage or Decorative Plants, Not Less Than 20 Varieties Excluding Palms and Ferns—First, Iowa Seed Company; second, Wilson Floral; third, Kirkwood Floral Company, Des Moines.

Collection Palms—First, Iowa Seed Company; second, Wilson Floral Company; third, Alpha Floral Company, Des Moines.

Collection of Ferns—First, Iowa Seed Company; second, Kirkwood Floral Company; third, Wilson Floral Company.

Collection of Coleus—First, Iowa Seed Company; second, Wilson Floral Company; third, Kirkwood Floral Company.

Collection of Geraniums—First, Iowa Seed Company; second, Wilson Floral Company; third, Kirkwood Floral Company.

Collection of Flowering Begonias—First, Iowa Seed Company.

Collection of Rex Begonias—Second, Iowa Seed Company.

Collection of Fancy-Leaved Caladiums—First, Iowa Seed Company; second Kirkwood Floral Company.

Collection of Crotons—First, Iowa Seed Company; second, Kirkwood Floral Company; third, Wilson Floral Company.

Collection of Cannas—First, Iowa Seed Company.

Specimen of Areca Lutescens—First, Iowa Seed Company; second, Wilson Floral Company; third, Alpha Floral Company.

Specimen Kentia Belmoreana—First, Iowa Seed Company; second, Wilson Floral Company; third, Alpha Floral Company.

Specimen Kentia Fosteriana—First, Iowa Seed Company; second, Wilson Floral Company; third, Alpha Floral Company.

Specimen Phoenix Canariensis—First, Iowa Seed Company; second, Wilson Floral Company; third, Alpha Floral Company.

Specimen Phoenix Roebelenii—First, Wilson Floral Company; second, Iowa Seed Company; third, Kirkwood Floral Company.

Specimen of Any Other Variety of Palm—First, Iowa Seed Company; second, Wilson Floral Company.

Specimen Cycas Revoluta—First, Iowa Seed Company; second, Wilson Floral Company.

Specimen Araucaria—First, Wilson Floral Company; second, Iowa Seed Company; third, Kirkwood Floral Company.

Specimen Dracaena—First, Iowa Seed Company; second, Wilson Floral Company; third, Kirkwood Floral Company.

Specimen Nephrolep—First, Kirkwood Floral Company; second, Wilson Floral Company; third, Iowa Seed Company.

Specimen Nephrolepsis—First, Wilson Floral Co.; second, Iowa Seed Company; third, Kirkwood Floral Company.

Specimen of Any Other Variety of Fern—First, Iowa Seed Company; second, Wilson Floral Company; third, Alpha Floral Company.

Specimen Asparagus Sprengeri—First, Iowa Seed Company; second, Wilson Floral Company; third, Alpha Floral Company.

Vase of Plants—First, Wilson Floral Company; second, Iowa Seed Company.

FLORAL DESIGNS AND CUT FLOWERS.

Display of Cut Flowers—First, Mrs. G. B. Hippee, Des Moines; second, Iowa Seed Company; third, Wilson Floral Company.

Display of Gladioli—First, Maple Hill Nursery, Nora Springs; second, George B. Woodruff, Independence; third, Mrs. G. B. Hippee.

Fifty Red Carnations—First, The Rosery, Des Moines; second, Lozier The Florist, Des Moines; third, Alfred Lozier, Des Moines.

Fifty Pink Carnations—First, Lozier The Florist; second, The Rosery; third, Alfred Lozier, Des Moines.

Fifty White Carnations—First, Lozier The Florist; second, The Rosery; third, Alfred Lozier.

Wreath of Flowers, Frame Not to Exceed Twenty-four Inches, on Easel—First, Lozier The Florist; second, Wilson Floral Company; third, The Rosery.

Single Spray of Flowers—First, Lozier The Florist; second, Wilson Floral Company; third, The Rosery.

Display of Asters—First, Wilson Floral Company; second, The Rosery; third, Mrs. G. B. Hippee.

Floral Design—(Wreath Excluded)—First, Wilson Floral Company; second, Lozier The Florist; third, The Rosery.

Twelve Spikes America Gladiolus—First, George B. Woodruff; second, Maple Hill Nursery, Nora Springs; third, Mrs. G. B. Hippee.

Twelve Spikes Augusta—First, George B. Woodruff; second, Mrs. G. B. Hippee.

Twelve Spikes Mrs. Francis King—First, George B. Woodruff; second, Mrs. G. B. Hippee; third, Maple Hill Nursery.

Twelve Spikes Yellow Gladiolus—First, Geo. B. Woodruff; second, Mrs. G. B Hippee; third, Maple Hill Nursery.

Twelve Spikes Any Other Variety—First, Mrs. G. B. Hippee; second, George B. Woodruff; third, Maple Hill Nursery.

Table Decoration For a Dinner With Covers for Six—First, Mrs. G. P. Hippee; second, Lozier the Florist; third, The Rosery.

Twelve American Beauty Roses—First, Wilson Floral Company; second, The Rosery; third, Lozier The Florist.

Mrs. Chas. Russell—First, Wilson Floral Company; second, The Rosery; third, Lozier The Florist.

Mrs. Aaron Ward—First, Wilson Floral Company; second, The Rosery; third, Lozier The Florist.

Sunburst—First, The Rosery; second, Lozier The Florist; third, Wilson Floral Company.

Twenty-five Red Roses--First, The Rosery; second, Wilson Floral Co.; third, Lozier The Florist.

Twenty-five Pink Roses—First, Lozier The Florist; second, The Rosery; third, Wilson Floral Company.

Twenty-five White Roses—First, The Rosery; second, Wilson Floral Company; third, Lozier The Florist.

Twenty-five Roses Any Other Color—First, Wilson Floral Company; second, The Rosery; third, Lozier The Florist.

Basket Assorted Flowers—First, Mrs. G. B. Hippee; second, The Rosery; third, Lozier The Florist.

Bride's Bouquet—First, Wilson Floral Company; second, Lozier The Florist; third, The Rosery.

Corsage Bouquet—First, Lozier The Florist; second, Wilson Floral Company; third, The Rosery.

Vase Assorted Flowers—First, Wilson Floral Company; second, The Rosery; third, Lozier The Florist.

AMATEUR LIST, PLANTS IN POTS.

Collection of Plants Arranged for Effect, Not Less Than Twenty Varieties—First, Mrs. M. Bredimus, Des Moines.

Collection of Ferns—First, Mrs. M. Bredimus.

Collection of Agaves, Cactus and Succulents—First, Mrs. M. Bredimus.

Collection of Begonias—First, Mrs. M. Bredimus.

Collection of Coleus—First, Mrs. M. Bredimus; second, Cyrus E. Harvey.

Collection of Geraniums—First, Mrs. M. Bredimus.

Collection of Abutilons—First, Mrs. M. Bredimus.

Collection of Fuchias—First, Mrs. M. Bredimus; second, Cyrus E. Harvey.

Collection of Cannas—First, Mrs. M. Bredimus.

Specimen Foliage Plant—First, Mrs. M. Bredimus.

Specimen Lantana—First, Mrs. M. Bredimus.

Specimen Flowering Begonia—First, Mrs. M. Bredimus.

Specimen Geranium—First, M. Bredimus; second, Cyrus E. Harvey; third, Edwin Grant, Carlisle.

Specimen Fern—First, Mrs. M. Bredimus.

Specimen Abutilon—First, Mrs. M. Bredimus.

Specimen Asparagus Sprengeri—First, Mrs. P. J. Nothum, Des Moines; second, Mrs. P. S. Brunk, Altoona; third, Mrs. M. Bredimus.

Specimen Any Plant in Bloom—First, Mrs. M. Bredimus; second, Edwin Grant.

Vase of Plants—First, Mrs. M. Bredimus.

Basket of Plants—First, Mrs. M. Bredimus.

AMATEUR LIST CUT FLOWERS.

Display of Cut Flowers—First, Mrs. M. Bredimus; second, June Collins, Bondurant; third, Cyrus E. Harvey.

Display of Zinnias—First, June Collins; second, Cyrus E. Harvey; third, Mrs. M. Bredimus.

Display of Salpigglgossia—First, June Collins; second, Mrs. M. Bredimus.

Display of Petunias—First, June Collins; second, Cyrus E. Harvey; third, Mrs. M. Bredimus.

Display of Calliopsis—First, June Collins; second, Cyrus E. Harvey; third, Mrs. M. Bredimus.

Display of Ornamental Grasses—First, Mrs. M. Bredimus; second, June Collins.

Display of Gladioli—First, Mrs. M. Bredimus; second, Cyrus E. Harvey.

Six Spikes Scarlet Gladioli—First, Mrs. M. Bredimus; second, Cyrus E. Harvey.

Six Spikes Pink Gladioli—First, Cyrus E. Harvey.

Six Spikes Any Other Color—First, Cyrus E. Harvey.

Display of Asters—First, Cyrus E. Harvey; second, Mrs. M. Bredimus; third, June Collins; fourth, Mrs. Frank Scott, Bondurant.

Display of Dianthus—First, June Collins; second, Mrs. M. Bredimus.

Display of Marigolds—First, Cyrus E. Harvey; second, June Collins; third, Mrs. M. Bredimus.

Display of Dahlias—Second, Cyrus E. Harvey.

Display of Phlox—First, Cyrus E. Harvey; second, June Collins; third, Mrs. M. Bredimus.

Display of Geraniums—First, Cyrus E. Harvey; second, June Collins; third, Mrs. M. Bredimus.

Display of Verbenas—First, June Collins; second, Cyrus E. Harvey; third, Mrs. M. Bredimus.

Display of Snapdragons—First, Mr. Cyrus E. Harvey; second, Mrs. M. Bredimus; third, June Collins.

Display of Nasturtiums—First, June Collins.

Display of Larkspurs—First, Cyrus E. Harvey; second, Mrs. M. Bredimus.

Display of Cornflowers—First, June Collins; second, Mrs. M. Bredimus.

Display of Balsams—First, Cyrus E. Harvey; second, Mrs. M. Bredimus; third, June Collins.

Display of Scabiosa—First, Cyrus E. Harvey; second, Mrs. M. Bredimus; third, June Collins.

Display of Pansies—First, June Collins; second, Mrs. M. Bredimus; third, Cyrus E. Harvey.

Display of Sweet Peas—First, Cyrus E. Harvey; second, June Collins; third, Mrs. M. Bredimus.

Display of Cosmos—First, Mrs. Myrtle E. Jones, Boone; second, Mrs. Andrew Conn; third, Cyrus E. Harvey.

Display of Gaillardias—First, June Collins; second, Cyrus E. Harvey; third, M. Bredimus.

Basket of Cut Flowers—First, June Collins; second, Mrs. Andrew Conn; third, Mrs. M. Bredimus; fourth, Cyrus E. Harvey.

Vase of Cut Flowers—First, June Collins; second, Mrs. Andrew Conn; third, Mrs. Myrtle E. Jones; fourth, Cyrus E. Harvey.

TEXTILE AND CHINA DEPARTMENT

SUPERINTENDENT—T. C. LEGOE, What Cheer.

JUDGES.................................LOIS RAYNOR, What Cheer,
LUELLA TUPPER, Des Moines.

HOUSEHOLD FABRICS, QUILTS, ETC.

Rug—Any Material—First Mrs. W. C. Raney, Des Moines; second, Ellia Turner, Iowa City.

Velvet Quilt—First, Edna Dickson, Rose Hill; second, Mrs. Louise M. Smith, Des Moines.

Silk Quilt—First, Mrs. F. L. Smalley, Des Moines; second, Mrs. A. H. Eichenlaub, Des Moines.

Outline Quilt—First, Mrs. J. B. Stevens, Des Moines.

Cradle Quilt—First, Jemina Tyler, Runnells; second, Jeannette F. Throckmorton, Chariton.

Cotton Patchwork Quilt—First, Mrs. Ora Hick, Adelphi; second, Mrs. A. W. Bennett, Des Moines.

Log Cabin Quilt—First, Mrs. A. H. Eichenlaub; second, Mary E. Barnes, Adelphi.

Worsted Quilt—First, Ella Turner, Iowa City.

Specimen of Quilting—First, Mary Jane Bennison; second, M. B. Miller.

Silk Comfort—First, Mrs. W. J. Porter, Waukee; second, Mrs. J. B. Stevens.

Worsted Comfort—Second, Mrs. J. B. Stevens.

Cotton Comfort—Second, Mrs. D. R. Brewer, Des Moines.

Coton Aplique Quilt—First, Mrs. W. C. Raney; second, Jeanette F. Throckmorton.

WAR TIME CLASSIFICATION

SEWING.

Work Dress—First, Mrs. M. J. Thomas, Des Moines.

Work Apron—First, B. D. Smith, Des Moines; second, Mrs. Joe Corrough, Bondurant.

Made Over Dress—First, Louise M. Smith; second, Nettie Milligan, Des Moines.

Dress Made From Cast-Off Garment for Child Under Eight Years—First, Mrs. Frank Scott.

Best Dress Made From Cast-Off Garment for Child Between Eight and Sixteen Years—First, Mrs. Frank Scott.

Child's Coat Made From Old Garment—First, Mrs. Myrtle E. Jones, Boone; second, Mrs. Frank Scott.

Clothing Made From Flour and Sugar Sacks—First, Mrs. M. J. Thomas, Des Moines; second, Mary McLennan, Des Moines.

Boy's Suit Made From Cast-Off Garments—First, Mrs. J. B. Stevens, Des Moines; second, Mrs. Frank Scott.

KNITTING.

Sweater—First, Mary J. Gaylor, Des Moines; second, Mrs. M. J. Thomas.

Wristlets—First, Mary L. Beran, Des Moines; second, Mary Gaylord.

Socks—First, Mrs. G. L. Aschau, Des Moines; second, Mary L. Beran.

Helmet—First, Mrs. G. L. Aschau; second, Mary L. Beran.

DARNING.

Darning on Wool Garment—Second, Mrs. J. E. Grant, Carlisle.

Darning on Silk Garment—First, Mary McLennan; second, Jane Adamson, Ankeny.

Darning on Cotton Garment or Household Article—Second, Jane Adamson.

Darning on Linen Garment or Household Article—First, Jane Adamson; second, Jeannette Throckmorton.

PATCHING.

Patching on Silk Garment—First, Mary McLennan; second, Jane Adamson.

Patching on Wool Garment—First, Jane Adamson; second, Mary McLennan.

Patching on Cotton Garment or Household Article—Second, Jane Adamson.

FABRICS.

Cotton Braided Rug—First, Ella Turnure, Iowa City.

Cotton Piece Quilt—First, Mrs. W. C. Raney.

Specimen Lace Not Less Than Two Yards—First, Mrs. J. C. Ash; second, Mrs. M. Cavalier, Ames.

Pair Woolen Mittens—First, Ella Turnure; second, Mary J. Gaylord.

Slumber Robe—First, Mrs. A. Davidson, Des Moines.

Pair Slippers, Hand Knit—First, M. J. Thomas; second, Ella Turnure.

Pair Gloves—First, Mary J. Gaylord.

Pair Woolen Socks—First, Ella Turnure; second, Mary J. Gaylord.

Ladies' Sweater—First, Mary J. Gaylord; second, Mrs. F. W. Moss, Des Moines.

Ladies' Skirt—First, Ella Turnure.

Ladies' Knit Shawl—First, Ella Turnure; second, Mrs. C. P. Wandling, Des Moines.

CROCHET.

Medallions (six)—First Mary L. Baren; second, Jessie Alexander.

Sweater—First, R. Thompson; second, E. L. Thompson.

Filet Tidy—First, Mrs. Alice Mathis, Des Moines.

Tray, Mounted—First, E. L. Thompson; second, R. Thompson.

Luncheon Set—First, Mrs. J. F. Cowgill, Des Moines; second, Edna C. Boody, Des Moines.

Pillow Cases—First, Mrs. J. C. Ash; second, Mrs. S. Stutsman, Des Moines.

Sheet—First, Mrs. Art Shaw, Oskaloosa; second, E. L. Thompson.

Towel—First, E. L. Thompson; second, M. B. Miller, Des Moines.

Turkish Towel—First, Mrs. W. J. Porter, Waukee; second, Mrs. E. N. Myer, Des Moines.

Collar—First, Jessie Alexander; second, Ella Turnure.

Collar and Cuff Set—First, Mrs. J. C. Ash; second, Mary McLennan.

Doily—First, Jessie Alexander; second, Mrs. C. D. Burkhart, Altoona.

Centerpiece—First, A. R. Clement, Des Moines; second, Lillian Mathis, Des Moines.

Bag—First, R. Thompson; second, Ella Turnure.

Table Runner—First, E. L. Thompson; second, Mrs. Jacob Abuhl, Ankeny.

Nightgown Yoke—First, Mrs. W. H. Wait, Leon; second, Mrs. W. C. Raney.

Corset Cover Yoke—First, Alice B. Cross, Des Moines; second, Mrs. Jno. Van Genkel, Altoona.

Linen and Crochet Centerpiece—First, Fay Pratt, Des Moines; second, Mrs. C. V. Brooks, Des Moines.

Linen and Crochet Doilies (Six)—First, Mary Jane Bennison; second, Mrs. John Corrough.

Linen and Crochet Lunch Cloth—First, M. S. Jones; second, Mary Jane Bennison.

Hugger—First, Ella Turnure; second, E. L. Thompson.

Shawl—First, R. Thompson; second, E. L. Thompson.

Cluny Scarfs—First, Lillian Mathis.

Cluny Centerpiece—First, Mrs. C. V. Brooks.

Cluny yoke—First, Mary L. Beran.

Camisole—First, Esther Alexander; second, Mrs. G. C. Bullard.

Infant's Hood—First, Mrs. W. C. Raney; second, Marinda Jeffries, Valley Junction.

Pair Infant Socks—First, M. S. Jones; second, Ella Turnure.

Slumber Robe—First, Ella Turnure.

Pair Slippers—First, M. S. Jones; second, Mrs. E. N. Myer.

Cotton Lace, Not Less Than One Yard—First, B. D. Smith; second, Mary L. Beran.

Crochet Lace on Curtain—First, Ella Turnure; second, Mrs. W. J. Porter.

Scarf—First, Mary Jane Bennison; second, B. D. Smith.

Bedspread—First, Mrs. W. C. White; second, Mrs. A. W. Bennett.

Specimen Crochet Work Other Than Named—First, Mrs. Charlie Tansey; second, Manilla Abuhl; third, Malina Cometo, Des Moines.

HAND NEEDLEWORK.

Envelope Combination—First, G. C. Bullard; second, Mrs. L. Stutsman.

Pillow Cases—First, Mrs. W. H. Wait; second, Mrs. Will Weisbrod, Fenton.

Bedspread—First, M. D. Miller.

Ladies' Waist—Second, R. Thompson.

Nightdress—First, Lulu Robertson, Oskaloosa; second, E. L. Thompson.

Nightshirt—Second, Mrs. J. B. Stevens.

Child's Dress, Neatest Made—First, Mrs. W. L. Meacham, Adelphi; second, Mrs. F .W. Moss, Des Moines.

Underskirt—First, E. L. Thompson; second, Lulu Robertson.

Fancy Apron—Second, Mrs. S. Stutsman.

Sofa Pillow—First, Mrs. W. G. Ryan; second, Mrs. B. H. Murran, Des Moines.

Neatest Mended Garment—Second, Jane Adamson.

Neatest Mended Glove—Second, Mary McLennan.

Neatest Darned Stocking—First, Mrs. B. R. Brewer; second, Jane Adamson.

Work Other Than Named—First, Mrs. J. B. Stevens; second, Mrs. W. H. Wait; third, Mrs. L. Stutsman.

WORK OF OLD LADIES.

Pair of Knit Wool Mittens—First, Mrs. L. Stutsman.

Pair of Knit Gloves—Second, Mrs. Alex Tilton, Ankeny.

Neatest Darned Work, Any Article—Second, Mary McLennan.

Neatest Made Dress—Second, Amy A. Silcott, Valley Junction.

Neatest Made Skirt—First, Mary McLennan; second, Mrs. L. Stutsman.

Hand-made Skirt—First, Mrs. L. Stutsman; second, Mary McLennan.

Specimen Outline Work—First, M. A. Corrough.

Nightdress—First, M. A. Corrough; second, Mrs. L. Stutsman.

Specimen Crochet Work—First, Mary McLennan; second, Mrs. M. Bredimus.

Comfort—First, Amy A. Silcott.

Silk Quilt—First, Lusina McClain; second, Mary E. Barnes.

Cotton Quilt—First, Mrs. Alex Tilden; second, Mrs. G. C. Driscoll, Des Moines.

Woolen Quilt—Second, Mrs. Alex Tilden.

Specimen Hemstitching—Second, Mrs. L. Stutsman.

Specimen Embroidery Other Than Named—M. A. Corrough; second, Amy A. Silcott; third, Mrs. A. H. Eichenlaub, Des Moines.

Apron, Neatest Made—First, A. R. Malone, Des Moines; second, Mrs. L. Stutsman.

Specimen of Lace Work—First, Mrs. M. Bredimus; second, Mrs. M. A. Bishop.

Silk Embroidered Lunch Cloth—First, M. A. Corrough.

Specimen Roman Embroidery—First, Mrs. M. Bredimus.

Stocking Bag—First, Mary E. Barnes; second, Amy A. Elliott.

Tatting Handkerchief—First, M. S. Jones.

Work Other Than Named—First, M. A. Rood; second, Mrs. M. E. Rollinson; third, Amy A. Silcott.

LINEN OR COTTON EMBROIDERY.

Centerpiece—First, Mrs. N. Albertson, Des Moines; second, Alice R. Stotts, Des Moines; third, Mrs. E. T. Hickenlooper, Des Moines.

Handkerchief—First, Mrs. A. H. Eichenlaub.

Pair Pillow Cases—First, Mrs E. M. Myer, Des Moines; second, Mrs. A. M. Lennon; third, Mrs. Myrtle E. Jones, Boone.

Six Napkins—First, Mrs. F. J. Armstrong, Des Moines; second, Mary Jane Bennison.

Dresser Scarf—First, R. Thompson; second, Mrs. Myrtle E. Jones.

Tablecloth—First, C. L. Cornwell, Ankeny.

Nightgown Yoke—First, Mrs. A. M. Lennon; second, Lulu Robertson; third, Fern Botsford.

Baby Dress—First, Mrs. F. W. Moss; second, Budd Decker Smith.

Baby Cap—First, Lulu Robertson; second, Francis Miller, Des Moines.

Lunch Cloth—First, Mrs. J. L. McDonough, Pleasantville; second, Mrs. S. J. Armstrong.

Pair Towels—First, Mrs. J. C. Ash; second, Mary Jane Bennison.

Specimen Wallachian Embroidery—Second, Mary Jane Bennison.

Specimen Eyelet Embroidery—First, Mary Jane Bennison; second, Mrs. J. C. Ash.

Specimen Coronation Cord Embroidery—First, Lulu Robertson; second, Mrs. Lizzie Ritzinger.

Bed Set—First, Mrs. F. W. Moss; second, Mrs. Will Weisbrod.

Work Other Than Named—First, Mrs. A. M. Lennon; second, Mrs. N. Albertson; third, Alice R. Stotts.

Lunch Cloth, Conventional—First Lulu Robertson; second, Mrs. E. N. Myer.

Piano Cover—First, Mrs. Will Weisbrod.

Centerpiece, Any Design—First, Mrs. Will Weisbrod; second, Mrs. E. N. Myer; third, Lulu Robertson.

Tray Cloth—Second, Mary Jane Bennison.

Sofa Pillow—Mrs. W. H. Wait; second, Mrs. Geo. E. Myers.

Six Doilies—First, Mrs. A. H. Eichenlaub; second, Mrs. S. Stutsman.

WHITE SILK EMBROIDERY.

Centerpiece, Any Design—Second, Mrs. A. H. Eichenlaub.

Tray Cloth—First, Bud Decker Smith.

Child's Flannel Skirt—First, Mrs. A. H. Eichenlaub.

Infant's Shawl—First, Mrs. F. G. Armstrong.

Infant's Cap—First, Mrs. J. B. Stevens; second, Bud Decker Smith.

ROMAN EMBROIDERY.

Lunch Cloth—First, Mrs. E. May Spring, Des Moines.

CROSS STITCH EMBROIDERY.

Sofa Pillow—First, Mrs. W. Porter, Waukee; second, Mary Jane Bennison; third, Mary McLennan.

Centerpiece—First, M. B. Miller; second, Mary Jane Bennison.

Scarf—First, Mary Jane Bennison; second, Ada B. Newquist.

Table Cover—First, Lulu Robertson; second, Mary Jane Bennison.

Bag—First, M. B. Miller; second, Lulu Robertson.

Pair Towels—First, Lulu Robertson; second, E. L. Thompson.

Luncheon Set—First, Lulu Robertson.

PUNCH EMBROIDERY.

Shirt Waist—Third, Bud Decker Smith.

Nightgown—First, Bud Decker Smith.

Combination Suit—First, Bud Decker Smith; second, Mrs. S. Stutsman.

Centerpiece—First, Bud Decker Smith; second, Alice B. Cross; third, Mrs. A. H. Eichenlaub.

Pillow Cases—First, Mrs. Will Weisbrod; second, Bud Decker Smith.

Scarf—First, Bud Decker Smith; second, Mrs. A. H. Eichenlaub.

Towels—First, Mrs. F. J. Armstrong; second, Bud Decker Smith.

HARDANGER EMBROIDERY.

Lunch Cloth—First, Mrs. E. N. Myer; second, Bud Decker Smith; third, Mrs. J. C. Ash.

Dresser Scarf—First, Mrs. E. N. Myer; second, Bud Decker Smith.

Centerpiece—First, Alice B. Peelstrom; second, D. L. Patton; third, Bud Decker Smith.

Sofa Pillow—Second, Mrs. E. N. Myer.

Bag—First, M. B. Miller.

Sideboard Cover—First, Bud Decker Smith.

MLLE FLUER.

Centerpiece—First, Mary J. Gaylord.

Doilies (six)—First, Mary J. Gaylord.

MEXICAN EMBROIDERY AND DRAWNWORK—HAND-MADE.

Carver's Cloth—First, M. S. Jones second, Ella Turnure.

Six Napkins—First, Bud Decker Smith.

Tablecloth—First, Mrs. W. H. Wait; second, M. S. Jones.

Dresser Cover—First, M. S. Jones; second, Mrs. Alice Mathis.

Apron—First, Mrs. A. H. Eichenlaub; second, Mrs. M. Cavalier.

Centerpiece—Third, M. S. Jones.

Tray Cloth—First, M. S. Jones; second, Mrs. W. H. Wait.

Pillow Cases—Second, Bud Decker Smith.

IRISH CROCHET.

Best Trimmed Shirt Waist—First, E. L. Thompson; second, R. Thompson.

Dresser Scarf—Second, E. L. Thompson.

Bag—First, Jessie Alexander.

Collar—First, E. L. Thompson; second, Mrs. A. I. Madden.

Collar and Cuffs—First, E. L. Thompson; second, Mrs. J. C. Ash.

Yoke—First, Lulu Robertson; second, Bud Decker Smith.

Infant's Cap—Mrs. Geo. Diebel; second, Ella Turnure.

Doilies—Second, M. B. Miller.

Jabot—First, Mary L. Baren.

POINT LACE.

Handkerchief—First, Mary Jane Bennison; second, Mrs. S. B. Snyder.

Collar and Cuff Set—First, Mrs. M. A. Bishop; second, Mrs. S. B. Snyder.

Yoke—First, Mrs. S. B. Snyder; second, Mrs. M. A. Bishop.

Infant's Cap—First, M. A. Bishop; second, Mrs. S. B. Snyder.

TATTING.

Edging and Insertion, One Yard—First, Mrs. W. H. Wait; second, Ella Turnure.

Handkerchief—First, Mrs. E. N. Myer; second, Almeda Freel, Pleasantville.

Tie Ends—First, Mrs. J. C. Gingery, Harlan.

Infant's Cap—First, Almeda Freel.

Tatting Bag—Ella Turnure.

Towel Trimmed With Tatting—First, Mrs. E. W. Freel; second, Almeda Freel.

Centerpiece—First, Mrs. J. C. Gingery; second, Mrs. G. L. Aschau.

Pillow Cases Trimmed With Tatting—First, Mrs. J. C. Ginery; second, E. L. Thompson.

Corset Cover Trimmed With Tatting—First, Bud Decker Smith.

Table Runner—First, Edith Freel.

Piano Scarf—Second, Mrs. J. W. Patrick.

Collar—Second, Ella Turnure.

MISCELLANEOUS.

Specimen Tapestry Embroidery—Second, Mary J. Bennison.

Specimen Outline Embroidery—First, M. D. Miller; second, Lulu Robertson.

Specimen Maderia Embroidery—Second, M. D. Miller.

Laundry Bag—First, M. D. Miller.

Darned Net Curtains—First, Mary Jane Bennison.

Opera Bag—First, E. L. Thompson.

ARTS AND CRAFTS.

Bead Chain—First, Mrs. M. Cavalier; second, Ella Turnure.

Bead Purse—First, Ada B. Newquist; second, E. L. Thompson.

Bead Belt—First, Mrs. F. W. Moss; second, Mrs. M. A. Bishop.

Raffia Basket—First, Mrs. W. C. Raney; second, Mrs. S. Stutsman.

Metal Tray—Second, Ada B. Newquist.

Metal Candle Shade—Second, M. B. Miller.

Tooled Leather Bag—First, Ada B. Newquist; second, Mrs. J. G. Ash.

Tooled Leather Portfolio—Second, Ada B. Newquist.

Tooled Leather Pocketbook—First, Ada B. Newquist.

Stenciled Piano Scarf—First, Jeanette Throckmorton.

Stenciled Table Cover—First, Jeanette Throckmorton.

Stenciled Scarf—First, Mrs. W. J. Porter, Waukee.

PROFESSIONAL LIST HAND PAINTED CHINA.

Best Collection—First, Mrs. Alice Seymour; second, Francis Stevenson; third, Gertrude Evans.

Vase Over 12 Inches—First, Mrs. P. H. Marsden; second, Mrs. Alice Seymour; third, Francis Stevenson.

Water Pitcher—First, Mrs. Alice Seymour; second, Mrs. May Christy; third, Ada B. Newquist.

Smoker Set—First, Francis Stevenson; second, Ada B. Newquist.

Dresser Set—First, Mrs. P. H. Marsden; second, Francis Godfred; third, Francis Stevenson.

Bon Bon Box, Covered—First, Mrs. Alice Seymour; second, Francis Godfred; third, Gertrude Evans.

Sugar and Creamer—First, Gertrude Evans; second, Francis Stevenson; third, Mrs. May Christy.

Serving Tray—First, Gertrude Evans; second, Mrs. May Christy; third, Mrs. Alice Seymour.

Set of Plates, 8 Inches or More—First, Mrs. W. H. Lyon; second, Mrs. Alice Seymour; third, Francis Stevenson.

Candlestick—First, Mrs. Alice Seymour; second, Francis Stevenson.

Teapot—First, Gertrude Evans; second, Mrs. Alice Seymour.

Open Bon Bon—First, Mrs. Alice Seymour; second, Mrs. P. H. Marsden.

Bread or Cake Plate—First, Mrs. May Christy; second, Francis Stevenson.

Whipped Cream Bowl—First, Mrs. Alice Seymour; second, Gertrude Evans.

Coffee or Chocolate Pot—First, Mrs. Alice Seymour; second, Gertrude Evans.

Fancy Cup and Saucer—First, Mrs. Alice Seymour; second, Mrs. W. H. Lyon.

Decorated Tile—First, Mrs. Alice Seymour; second, Ada B. Newquist.

Chop Plate—First, Mrs. P. H. Marsden; second, Mrs. Alice Seymour; third, Gertrude Evans.

Bread and Butter Plates, Six Inch—First, Francis Stevenson; second, Mrs. Alice Seymour; third, Mrs. P. H. Marsden.

Olive or Pickle Dish—First, Mrs. Alice Seymour; second, Mrs. May Chirsty.

Marmalade Jar and Plate—First, Mrs. Alice Seymour; second, Mrs. P. H. Marsden.

Nut Bowl (six individual bowls)—First, Mrs. Alice Seymour; second, Francis Stevenson.

Radish Tray—First, Mrs. Alice Seymour; second, Mrs. May Christy.

Syrup Pitcher—First, Mrs. Alice Seymour; second, Mrs. May Christy.

Bread and Milk Set—First, Francis Stevenson; second, Gertrude Evans.

Cheese Plate—First, Mrs. Alice Seymour; second, Francis Stevenson.

Salad Bowl—First, Mrs. Alice Seymour; second, Mrs. W. H. Lyon.

Fruit Bowl—First, Ada B. Newquist; second, Mrs. Alice Seymour; third, Gertrude Evans.

Standard or Footed Compote—First, Mrs. Alice Seymour; second, Francis Stevenson.

Relish Set—First, Mrs. Alice Seymour; second, Francis Godfrey.

Set Fruit Plates—First, Mrs. Alice Seymour; second, Mrs. P. H. Marsden; third, Mrs. W. H. Lyon.

Card Receiver—First, Francis Stevenson; second, Mrs. Alice Seymour; third, Mrs. P. H. Marsden.

Meat Set, Platter and Six Plates—First, Gertrude Evans; second, Francis Stevenson; third, Ada B. Newquist.

Tumbler Coasters—First, Mrs. Alice Seymour; second, Gertrude Evans.

Milk Pitcher—First, Mrs. Alice Seymour; second, Francis Godfrey.

Talcum Shaker—First, Mrs. May Christy; second, Mrs. P. H. Marsden.

Teapot Stand—First, Mrs. Alice Seymour; second, Mrs. P. H. Marsden.

Tea Caddy—First, Francis Stevenson; second, Mrs. Alice Seymour.

Ice or Butter Tub—First, Gertrude Evans; second, Ada B. Newquist.

Fernery—First, Francis Stevenson; second, Mrs. Alice Seymour.

Original Conventional Design for Plate 10 Inches—First, Mrs. Alice Seymour.

Other Than Named—First, Mrs. Alice Seymour; second, Gertrude Evans; third, Francis Stevenson.

AMATEUR LIST HAND-PAINTED CHINA.

Best Collection—First, Mrs. Lake Bower, Des Moines; second, May Goodbarn, Des Moines; third, Mrs. Frank Mutchler, Des Moines.

Chocolate Pot—First, Mrs. Frank Mutchler; second, R. Thompson; third, Anna E. Shettle.

Comb and Brush Tray—First, Mrs. Lake Bower; second, Mrs. Frank Mutchler; third, Mrs. Earl Manbeck.

Perfume Bottle—First, R. Thompson; second, Mrs. Earl Manbeck.

Spoon Tray—First, Mrs. Lake Bower; second, Mrs. Earl Manbeck.

Teapot—First, R. Thompson; second, May Goodbarn.

Plates, 8 Inches or More (six)—First, Anna B. Shettle; second, Francis Miller, Des Moines.

Tete-a-Tete Set (3 pieces)—First, Mrs. Lake Bower; second, Mrs. Earl Manbeck.

Bread and Milk Set—First, Mrs. Lake Bower; second, Mrs. Earl Manbeck.

Relish Set—First, Mrs. Earl Manbeck.

Sugar and Creamer—First, Mrs. Lake Bower; second, May Goodbarn; third, Mrs. Frank Mutchler.

Loaf Sugar Holder—First, Mrs. Lake Bower; second, Francis Miller.

Vase Over Ten Inches—First, Mrs. Frank Mutchler; second, May Goodbarn; third, Francis Miller.

Vase Under 10 Inches—First, May Goodbarn; second, Mrs. Lake Bower; third, Anna E. Shettle.

Decorated Tile—First, Mrs. Earl Manbeck; second, Mrs. Lake Bower.

Set Cups and Saucers—First, Francis Miller; second, Anna E. Shettle.

Rose Bowl or Flower Holder—First, Mrs. Lake Bower; second, Hazel Smith, Keota; third, Anna E. Shettle.

Covered Bon Bon—First, R. Thompson; second, May Goodbarn; third, Mrs. Frank Mutchler.

Olive Dish—First, Mrs. Earl Manbeck; second, Mrs. Lake Bower.

Desk Set—First, Anna E. Shettle; second, Mrs. Earl Manbeck.

Marmalade, Jar and Plate—First, Mrs. Lake Bower; second, Anna E. Shettle; third, Mrs. Earl Manbeck.

Candlestick—First, Mrs. Lake Bower; second, Mrs. Earl Manbeck.

Nut Bowl—First, Mrs. Earl Manbeck; second, Anna E. Shettle.

Mayonnaise Bowl—First, R. Thompson; second, May Goodbarn.

Pitcher, Water or Lemonade—First, May Goodbarn; second, Mrs. Lake Bower; third, Mrs. Frank Mutchler.

Tobacco Jar—First, Mrs. Frank Mutchler; second, Mrs. Earl Manbeck; third, Anna E. Shettle.

Syrup Pitcher—First, Mrs. Lake Bower; second, Anna E. Shettle.

Milk Pitcher—First, Mrs. Lake Bower; second, Anna E. Shettle.

Tumbler Coaster—First, Mrs. Lake Bower; second, Francis Miller.

Guest Room Set—First, May Goodbarn.

Open Bon Bon—First, Mrs. Lake Bower; second, May Goodbarn.

Chop Plate—First, R. Thompson; second, Mrs. Lake Bower.

Cake Plate—First, May Goodbarn; second, Hazel Smith.

Fernery—First, May Goodbarn.

Bread and Butter Plates, Six inch—First, Mrs. Earl Manbeck; second, Mrs. Lake Bower; third, Mrs. F. M. Jackson, Ankeny.

Fruit Set, Bowl and Six Plates—First, Mrs. Frank Mutchler; second, Mrs. Lake Bower; third, Francis Miller.

Other Than Named—First, Mrs. Frank Mutchler; second, Helen M. Keefner, Des Moines.

HAND PAINTED CHINA.

(Boys and Girls Under 20 Years of Age.)

Best Collection—First, Fern B. Miller, Des Moines; second, Chester Hill, Des Moines.

Vase Under 12 Inches—First, Chester Hill; second, Fern B. Miller.

Set Bread and Butter Plates—First, Fern B. Miller; second, Chester Hill.

Olive or Pickle Dish—First, Chester Hill; second, Fern B. Miller.

Open Bon Bon—First, Fern B. Miller; second, Chester Hill.

Bread or Cake Plate—First, Chester Hill; second, Fern B. Miller.

Water Pitcher—First, Fern B. Miller; second, Chester Hill.

Coffee or Tea Pot—First, Fern B. Miller; second, Chester Hill.

Set Fruit Plates—First, Fern B. Miller; second, Mrs. A. I. Madden.

Candlestcik—First, Chester Hill; second, Fern B. Miller.

Cup and Saucer—First, Chester Hill.

Syrup Pitcher—First, Fern B. Miller; second, Chester Hill.

Jardinere—First, Chester Hill.

Other Than Named—First, Fern B. Miller; second, Chester Hill.

GRAPHIC AND PLASTIC ARTS.

Oil Painting—First, Jean Dayton West; second, Claude Patterson; third, Edna Patzig; fourth, Harriet Macey.

Water Color Painting—First, K. K. Van Duzee; second, Edith Bell; third, Claude Patterson; fourth, Louise Orwig.

Black and White or Monochrome Painting—First, Claude Patterson; second, Theodora Aulmann; third, Louise Orwig; fourth, Gladys Corbit.

Posters of Pictorial or Decorative Design—First, Gladys Corbit; second, Theodora Aulmann; third, Claude Patterson; fourth, Armenia Sampey, Newton.

Collection Not Less Than Six or More Decorative Designs Other Than Pictorial—First, Harriet Macey; second, Theodora Aulmann; third, Louise Orwig; fourth, Claude Patterson.

JUNIOR CLASS GRAPHIC AND PLASTIC ARTS.

Oil Painting—First, Harold Oldfield, Des Moines; second, Ruth Gray, Des Moines.

Water Color Painting—First, Bertha Shore, Des Moines; second, Ruth Gray; third, Lucile Bennison; fourth, Margery Jones, Des Moines.

Black and White or Monochrome Drawing—First, Margery Jones; second, Ruth Gray; third, G. Bennison; fourth, Bertha Shore.

Collection Not Less Than Six Original Designs, Other Than Pictorial—First, Ruth Gray; second, Margery Jones; third, G. Bennison.
Press Reports of the 1918 FAIR—

THE 1918 IOWA STATE FAIR

The Iowa Homestead.

Production, conservation and patriotism were the keynotes of the 1918 Iowa State Fair. Iowa farmers bid fair to produce the largest and most valuable crops this year ever known. Already there are evidences aplenty that the value of the hay, wheat, oats, barley and rye crops produced in Iowa this year will exceed the value of the same crops of last year by fully $40,000,000. Even with the southern part of the state producing but a fragment of the anticipated corn crop (because of long continued drouth) there is good reason to believe that Iowa's field crops will approximate a billion dollars this year for the first time in the state's history. Production is near its apex on Iowa farms this year; Iowa farmers came to the fair prepared to rejoice and to learn how to make this year's yields continue and increase next year. But this was not all. A feeling that great as are the crops produced, there is need of saving every bit of foodstuff is abroad throughout the state. A prodigal people are becoming frugal; a spendthrift people are becoming thrifty. That is one reason why the classes which taught farm housewives how to use substitutes for wheat and butter and sugar were crowded all day long at this year's fair, why the crusade for food conservation was advanced by the state fair as nothing else has advanced it since the war began. But even this was not all. There was still another and a higher-sounding keynote. It was that of patriotism. Last year there were some three or four thousand Iowa boys encamped at the fair. They wore the khaki, but they had not seen active service abroad. One day they passed in review before Governor

Harding, Senator Cummins and other notables. It was not long after the fair came to an end before these boys—the gallant old Third Iowa—received their marching orders. They have been in the trenches of France now for several months past. They have undergone the baptism of fire and of blood. They were "in at the death" at Chantigy, at Chateau Thierry, at a dozen other places which are imperishable in American history because it was there that American blood stained the soil of France, and American valor pushed the Huns back toward the Rhine. The boys who were at the 1917 Iowa State Fair are in France today, some of them never to return, for they have paid the big price of life itself that the world might be kept free. But their memory was everywhere on the fair grounds this year. The flags of the United States, France and England flew over the grandstand as they had flown last year, and new soldier boys—a handful of them compared with the thousands last year—were there to keep the martial spirit alive. But the visitors looked on the soldier boys this year with eyes of sadness, for they brought memories of the boys "over there;" still they were eyes of pride too, for the boys "over there" are doing their bit so nobly and bravly. Hence it was that when the military band or the jackie band from the Great Lakes Naval Training Station played, patriotism ran riot, that when the flag or a soldier came in view loyalty mounted high, that patriotism became, after all, the dominant, far-sounding keynote of Iowa's great fair.

In some respects, perhaps, the fair will be classed as a disappointment; there were no records of people and of dollars broken, but there was a seriousness about the whole fair that struck one over and over again. Farmers came to learn. The labor problem is serious and growing more so each day. Farm labor is scarce; the farmer must work harder himself, therefore he wants labor-saving and time-saving machinery, and the fair gave him his opportunity to inspect it and choose from a great variety.

"A Million Acres of Winter Wheat in Iowa" is the slogan heard on every lip these days; Iowa is becoming a wheat state as it had never planned or expected to become, and while corn is still king, the Iowa farmer has to learn wheat methods and the fair gave him his opportunity. It is hardly to be wondered at that Iowa, having given 86,010 boys and men to the army and the navy (a great majority of these having come from the farm) should be unable to send as many men to the fair this year as last. There was farm work to be done and but few men to do it; hence, the attendance was not up to last year's record-breaking figure. Again, the exhibits were not as large. There were many empty stalls in the stables; the shortage of labor, the high cost of transportation, the high price of feed, all these and many other things combined to keep the stock exhibits down. There were many empty spaces in Machinery Hall; the fair was by no means "the biggest and best," as has been said every year lately in utmost truth. But it was a great fair, a wonderful fair, and it will never be forgotten, for production, conservation and patriotism make a harmony which will ring in the ears long after the tumult and the shouting dies, the captains and the kings depart. The Iowa Homestead will always consider the 1918 fair one of the very best and the very finest of all the long line, for there was a sentiment to it which has attached to no other. The government is to be congratulated on encouraging such fairs at such a time.

The weather for the most part was ideal; a trifle warm at times during the day, but always pleasant in the evening. Threatened rains on Wednesday cut the attendance down somewhat that day, so that Tuesday was the big day this year. However, the attendance on that day was 13,000 below the record for the same day last year. Up to the close of the gates on Tuesday night, the total attendance was 180,556, as compared with 222,043 for the same length of time last year. With the appearance of the British aerial mission, which was due to fly from Kansas City to Des Moines

Thursday afternoon and perform evolutions at the fair grounds and the automobile races on Friday afternoon, the attendance bids fair to continue good until the close of the fair Friday night. With continued good weather, the total attendance should be around the 250,000 mark. The monetary receipts up to Tuesday night were $141,094.92, as compared with $158,834.92. The fair will pay out and make a profit this year (notwithstanding the decrease in attendance and receipts) with continued good weather.

The government's war exhibit, housed in the old Power Hall, was one of the most interesting displays of the entire fair, yet it was so placed that many visitors missed it altogether. It should have been given some of the vacant space in Machinery Hall, or put in a more central part of the grounds. A similar display at the Illinois State Fair the week before was given the central and most accessible building on the grounds. The government is taking advantage of the state fairs this year to educate the people in our national war work. Exhibits show how our soldiers are armed, fed, clothed, nursed, and sheltered. Figures were exhibited at Des Moines last week clothed in the uniforms of the various branches of the army service. Nearby were Browning and Lewis machine guns and rifles, hand grenades, bayonets, entrenching tools, cartridge belts, gas masks, cooking and eating utensils, packs, and all the accoutrements of the men who are over in France today so valiantly doing their bit to keep the world safe for democracy. Nor was the navy overlooked. Torpedoes were exhibited, attracting the greatest attention, along with depth and floating mines and bombs, and models of immense liners and battleships. A splendid exhibit of photographs showed our boys in action, in the trenches, in the field dressing stations, on hospital trains, and all manner of their life abroad. It is doubtful if a more interesting exhibit of anything in a non-agricultural line was ever made at the Iowa fair than this war exhibit of the government. The jackie band from the Great Lakes Naval Training Station rendered concerts during the day, so that all in all this exhibit deserved premier place among the attractions and should have had better housing than was granted it.

With Iowa having more automobiles proportionate to population than any other state in the union, adopting motor trucks in large number to enable produce to be moved to the market promptly, and looking to the tractor to solve the man-power shortage due to the war, it is not to be wondered at that the automobile, truck, tractor, and general farm implement exhibit at the Iowa State Fair this year should have aroused more interest than ever before. There are whole communities, particularly in the western part of the state, where practically all the live stock shipped to market is sent by motor trucks. Farmers generally have read of this and were anxious to inspect the numerous makes of trucks shown at the fair this year. They have likewise read the reports of the Salina tractor demonstration, as reported in The Homestead, and have been eager to see the year's development in the tractor, which was exhibited at Des Moines this week in unusually large number. Taken all in all, it is doubtful if a more eager number of farmers ever looked over a machinery display than looked over the acres of farm implements of various kinds last week at Des Moines. While there was considerable vacant space left in Machinery Hall proper, the ground devoted to the tented exhibits and to the demonstrations of trucks and tractors was crowded. Iowa farmers are buying farm machinery by the millions of dollars each year; they are the best customers on earth for time-saving and labor-saving appliances, so it is unusually fitting that so much space and attention should be given to this display at the Iowa State Fair. This was one of the few departments in which it could be truthfully said that this year's display was "bigger and better than ever before."

The splendid news that Iowa has gone "over the top" in the matter of county agent, and has attained a stage of "100 per cent efficiency" in this important respect, was announced to those who visited the booth of the Iowa Farm Bureaus in Agricultural Hall. Iowa has 99 counties; there are today 100 county agents. The fact that Woodbury county (one of the largest in the state) has been divided into two sections, each one of which has an agent, explains why the state has one more agent than there are counties. The work of getting the state "over the top" was accomplished within the last year; within the last few months, in fact. On July 1, 1912, just six years ago, only one county in Iowa had an agricultural agent. That was Clinton county, the pioneer in this good work. A year later the number of counties with agents had increased to eight. On July 1, 1914, there were ten counties with farm agents at work. A year later the number had increased to eleven. On July 1, 1916, there were twenty counties with agricultural agents, while the same time next year found the number increased to twenty-nine. That was just a year ago; yet in the twelve months intervening, the number has increased from 29 to 100 and every county in the state now has a farm agent, with a very noticeable effect in the increasing of crops and the improvement of farm life conditions generally. The further information was given out at this booth at the fair that there are 992 officers and directors of the 100 farm bureaus in the state, with 33,187 members enrolled, the annual membership fees being $149,140, and the annual budget being $387,340. The amount of government aid given the various bureaus in this work now approximates $180,300, while the county aid amounts to $57,900. There are 12,400 farm bureau co-operators. The 100 county agents are assisted by two club leaders and 41 home demonstration agents. Iowa has the great credit of being the first state west of the Allegheny mountains to have an agricultural agent for every county. It is likewise the first of all the big agricultural states, regardless of location, to go over the top, with every county represented in the work. These and other interesting facts were given to all who visited the farm bureau booth or attended the county agent conference at the Iowa State Fair this week.

The building of the Iowa State College always repays an extended visit. There is always some striking exhibit or novelty which rivets attention to the work of the college. This year it was to be found in the stairway display which confronted the visitor as he entered the main door. It was the "stairway to victory and prosperity by man-power efficiency, with the proper farm organization and management." Such efficiency in labor, organization, and management, accomplishes wonderful results, according to the data which was placarded on the stairway, which led from poverty up to prosperity, via an Iowa farm. Three years ago the state college made a comprehensive survey of all the farms in twelve townships in the state. The average for all of the 832 farms was secured; likewise the average for the 109 farms which proved to be the best of the 832 in the survey. Comparisons are sometimes odious, never more so than when a farmer sees how he is losing money as compared with his neighbor, when he might easily do fully as well, if only he would apply a little brains with his brawn. The Ames statistics of the 109 best farms in the survey and the average of all the 832 farms showed the farmer wherein his foot had slipped on one or another of the steps in the stairway to victory and prosperity. For instance, the number of acres per farm on the best farms in the survey was 213; the average number for all in the survey was only 156. The number of pounds of live stock per man on the average of all the farms was 123,000; on the 109 best farms it was 172,000. The acres of crops per $100 worth of machinery were 23 on the average farm; 24 on the best farms. The acres of crops per horse were 17 on the average farm; 21 on the best. The acres of crops per man were 63 on the farms as they ran; 76 was the average for the 109 farms which proved to be the best. The farms, as they came, good and poor, produced 1,001 bushels of corn per man; on the 109 farms which were the pick of the lot, 1,378 bushels of corn per man were produced. With wheat, the returns were 223 bushels for the average farm per man; 401 bushels for the best farms, per man. The profits per acre were $2.37 for the general run of the farms in the survey; the average profits per acre for the 109 best farms were $6.73, or almost three times as much. The profits per man on the average farm were $261 for the year; on the good farms, they were $896. The profits per farm, for the entire number in the survey, were $370 a year; for the 109 farms which were the best, the year's profits were $1,433, or four times as great. The farmer who would study out these figures and then apply them to his own farm could hardly fail to have his eyes opened. The underlying idea of it all was that the efficient use of man labor on Iowa farms would do two things: First, increase crop production enough to feed 3,000,000 soldiers for 4 2-3 months; second, at the same time release 44,000 farmers for army service. The display was strikingly made and could hardly fail to arouse thought.

The value of cow testing was effectively proved by the exhibit of animals belonging to members of the Marshall County Cow-Testing Association. The fact that the labor income ranged from $10.97 to $99.20 for cows occupying adjoining stalls shows the value of weighing and testing the milk and keeping books, so that the boarder cows can be sent to the block and eliminated from otherwise profitable herds. This cow-testing exhibit has come to be a standard attraction at the fair, never failing to arouse attention and interest. Unusually courteous attendants were ready to explain all the good points of the animals exhibited this year. A grade Holstein was exhibited, which, under poor management, produced but 9,487 pounds of milk and 308 pounds of butter fat in a year. This same cow, under good management, was made to produce 11,636 pounds of milk and 373.9 pounds of butter fat in a year. This proved the value of care and attention and showed the effectiveness of the testing associations, which make much of these two cardinal points. Other cows were shown, which ranged from animals making but poor returns for all the feed and care given them, to others which amply repaid their board and made their owner a good profit. Thus, for example, there was a grade Holstein exhibited, which returned 4,612 pounds of milk and 133.7 pounds of butter fat in a year, showing a labor income of $10.97, while in the very next stanchion was another grade Holstein which returned 11,343 pounds of milk and 393.3 pounds of butter fat, and yielded a labor income of $99.20. Other Holsteins were shown, the annual labor income of which were $22.64, $25.51, and $28.27; while Shorthorns were exhibited, the labor income of which were $26.66 and $32.54. The movement to establish cow-testing associations in Iowa is gaining ground rapidly and this year's fair exhibit will give the campaign a good impetus.

Ever since it was first erected, the Woman's Building has been a center of interest. Never did it prove its worth so much as this year. Never was it so thronged with tired women and children, seeking rest. Never was the program of attractions so varied or so excellent. The baby health contest attracted the usual number of entries, both from rural and urban districts, and lasted throughout the week. In addition, there was good music by Hawaiian instrumentalists and vocalists, and two novel features in the form of a wild flower pageant and a fashion show. A very beautiful feature of the program was the original pageant by Miss Esse Hathaway, entitled "Festival Iowa Wild Flowers." This was put on by Iowa children from various part of the state. Miss Huldah Haskamp had charge of the original interpretative dances. A central musical theme from a series of old Indian melodies was arranged by Miss Gertrude Miller. Costumes were under the direction of Miss Joyce Latham. The costumes were designd by Miss Velma Wallace and Miss Joyce Latham. A very novel, interesting and educational feature of the daily program was a demonstration of "Art and Conservation in Clothing." Garments were shown on living models. Lectures were given by Miss Ruth Curtiss. The exhibit was under the direction of Miss Ethelyn Dodson and was arranged by the home economics department of the Iowa State College at Ames. Another attractive and interesting feature was the thrift exhibit, showing possibilities of made-over garments. Talks were given by Miss Cation, of the Iowa State College at Ames, on Thursday and Friday.

The Homestead, some months ago, printed an article descriptive of the methods advocated by the authorities of the Iowa State College at Ames for drying out soft corn. A display of the methods and a model of the various appliances was one of the big features of the college exhibit at Des Moines this week. That soft corn can be dried on the farm where grown, so that it is safe for storage, at a cost of less than 5 cents a bushel for fuel and power, was demonstrated in a series of tests carried on by the farm crops section of the Iowa State Agricultural Station. The method which was successfully tried out at Ames was suggested to the college authorities by Mr. J. W. Winterbothem, of Waterloo, Iowa. The air was heated with an ordinary house furnace, with 28-inch grate. The heated air was pulled through the heating chamber of the furnace and carried to the center of the crib by an exhaust fan located between the furnace and the crib. From 1,200 to 2,000 cubic feet of air was delivered per minute to the center of the crib at a temperature under the best conditions of from 160 to 180 degrees Fahrenheit. The only way that this volume of air could escape from the crib was by working out through and between the ears of corn, this expanded air taking up a large amount of water. The crib in which the corn was dried was 48 feet long and 8 feet wide, with the corn varying in depth from 5 to 8 feet. It was an ordinary crib, such as is to be found on practically every farm in the corn belt. In the first of four cribs dried in the initial experiment, the moisture content of the corn was reduced from over 30 per cent to less than 10 per cent, in 24 hours' time, at a cost for fuel and power of approximately 3 cents per bushel. In this test the moisture was reduced much lower than was necessary, or in fact, desirable, as ear corn containing 18 per cent of moisture would be perfectly safe against molding and heating, so that the cost for drying to a sufficient degree of moisture could have been reduced to 2 cents a bushel. A second crib, approximating 600 bushels, was dried from 30 per cent to 13 per cent at a cost for fuel and power of 2 cents a bushel. When the experiments had been successfully completed, Prof. H. D. Hughes, in charge, announced: "The type and size of the furnace may vary greatly, depending upon the amount of corn to be dried and the temperature of the air. The best results can probably be secured by using the blower of any type of silage cutter, this blower being used to force the air into the chamber of the furnace, which, of course, must be made airtight. A two- to four-horse power engine will operate almost any fan or blower which may be used. If the corn is to be dried in a circular crib, a circular ventilator two feet in diameter and four feet in height will need to be constructed. A framework can best be covered with wire fence material, as this will offer the least resistance to the heated air. If the regular crib is used, it will be necessary to make a conduit about 16 inches square to be placed on the floor down the center of the crib, with a two-foot drop door arranged at proper intervals in the conduit. The corn may be dried by blowing the air through the crib without heating it, but the cost of power to run the fan long enough to do this will be much greater than the cost of fuel to heat the air. The importance of heating the air will be appreciated when it is stated that air heated to 160 degrees can carry eight times as much moisture as at 80 degrees, and over 15 times as much as at 60 degrees."

The boys' judging contest in the stock pavilion attracted a large number of entries and quite general interest. Contestants to the number of 155 were entered in the event this year. Each boy in the contest was required to judge two rings each of horses, cattle and swine. The decisions had to be written. Scholarships to the value of $800 were awarded, in addition to special prizes. The individual honors were won as follows: Rex Bell, of Ottumwa, first; Harold White, of Rhodes, second; Stanley Rogers, of Troy, third; Roger Wilkinson, of Mason City, fourth; Vernon C. Peters, of Andover, fifth; Morris Butler, of Marshalltown, sixth; George Rosenfeld, of Kelley, seventh; Louis Buck of Stockton, eighth; Harold W. Brown, of Woodbine, ninth; Henry Yeager, of Woodbine, tenth. In the county teams the honors went to the team from Marshall county, of which W. A. Buchanan, is agricultural agent. This prize-winning county team was composed of the following boys: Howard Ellis, of State Center; Morris Butler, of Marshalltown; Raymond Bivens, of Albion; Howard Sosholtz, of Melbourne, and Harold White, of Rhodes. The interest in the agricultural work of the boys and girls of the state is growing steadily and these contests are attracting widespread attention.

The live stock show of the Iowa State Fair was smaller in all departments this year than last and in some instances very much smaller; the cattle show was particularly small, but in no instance was there any lack of quality. There were several reasons for this: first, scarcity of help; second, the demand for live stock in all breeds being so strong that breeders have no difficulty in finding an outlet for their surplus stock, in many instances thought that as a war measure, perhaps, they could afford to stay at home this year; third, the fact that the Illinois State Fair did not close in time for breeders to get to the Iowa fair by Saturday morning, the day judging began, forced them to stay away. There was, however, no lack of interest in the fine cattle, horses and swine on exhibition on the part of visitors. In fact, exhibitors were exceedingly well satisfied with the inquiries received and the sales made. The cattle and horses in particular were especially well fitted for the show and only in very few cases was there any lack of condition.

The swine show compared more favorably with that of last year than any of the other live stock exhibits; in fact there were 2,236 hogs on the grounds. The big type of hogs were much in evidence among the leading breeds. There were fewer of this type among the Chester Whites than among any other of the breeds, but even in this breed there was a tendency away from the short, thick type that has been popular in the past.

The horse show was considerably smaller than last year and it was smaller than in 1917 than in 1916. The small show was at least partially due to the fact that a number of Belgian breeders did not take their horses into the ring as explained elsewhere. It was evident, however, that there is still a strong demand for the big drafter and it was evident also that the men who are raising colts throughout the country are not interested in the smaller type of stallions; they are looking for weight and substance and this was much in evidence at the Iowa show.

The exhibit made by the boys and girls was the most impressive of the live stock show. When the 107 animals, fitted by these future stockmen and farm women, were led into the ring, all present were agreed that it was the largest and one of the best classes ever brought before a judge. Great credit is due the club leaders and the fair management for the stimulation and encouragement of an enterprise which will mean so much to the future cattle and fair interests of the state. These calves were secured last fall, and have been fed and cared for by their young owners throughout last winter and this summer, the contest closing October 1, 1918. Only steers or spayed or martin heifers, either pure-breds, cross-breeds, or grades, were eligible for entry in the contest.

The boys and girls exhibited the pure-bred animals in the open classes where they met opposition with two breeder exhibitors, E. M. Cassady & Son, of Whiting, and George Rosenfeld, of Kelley.

Little Miss Josephine Garden, of Wapello, Ia., was the proud exhibitor of the pure-bred heifer, Iowa's Venus, which won first and championship in the pure-bred Shorthorn class, and later second in the great baby beef class.

E. M. Cassady & Son won first and championship in the pure-bred Hereford class, while George Rosenfeld, of Kelley, Ia., won first and championship on His Highness in the Angus class.

In the grade and cross-bred Shorthorns, Charles Warren, of Gilbert, won first on an unnamed calf, E. M. Cassady & Son, of Whiting, won first honors in the Hereford grade and cross-bred class on Bobby, and Charles Ryan, of Irwin, took first in the grade Angus class on the splendidly-finished steer, Reddy, which later became first in the great baby beef class of 107 head. This steer was sired by a registered Angus bull and out of a grade Shorthorn cow, and was a living example of what a registered sire can do toward improving a grade herd. Reddy weighed 900 pounds when he left for the show and had been fed and cared for entirely by Charles, who is the son of Mr. Ryan, of Escher & Ryan, the well-known Angus breeders at Irwin. He is already walking in the footsteps of his father.

The winner of the second prize in the baby beef class was Miss Josephine Garden, of Wapello, on her yearling pure-bred Shorthorn heifer, that also won first and championship in the pure-bred Shorthorn class. Miss Josephine is only 12 years old and demonstrated that a girl can do as well at fitting an animal for the showing as can a boy.

The all-absorbing thing of the baby beef show was the fact that the 107 calves had all been fed and cared for by young boys and girls. The lessons they have learned in fitting their animals for a great state fair will never be forgotten by them, and in many cases these lessons will have much to do with deciding their future. When Iowa farmers generally give their young children a chance to raise a calf or a pig and give them a fair share in the products of their labor, they will find that more of them will stay on the farm when they reach maturity. Let this great object lesson, which the Iowa State Fair put before the people of Iowa this year, teach the desirability of giving their children something of their very own to handle and bring to market age—and don't forget to give them a share in the profit.

THE GREAT IOWA STATE FAIR.

Wallaces' Farmer.

If the attendance at the Iowa State Fair this year is not as large as in some years gone by, and if the exhibits are not as numerous, there are plenty of excellent reasons why. The war has taken out of Iowa a good many thousands of young men who have been in the habit of attending this fair in the past. Help is scarce on the farm, and not for many years has it been so difficult for the farmer to leave home for a few days. And there is a very proper tendency on the part of people to economize, to save their money and give to the Y. M. C. A. and Red Cross, and to buy Liberty bonds and War Savings stamps. But notwithstanding all this, the man who visits the Iowa fair this year for the first time will open his eyes in astonishment at the magnitude of this greatest of all agricultural exhibitions, at the high quality and number of the exhibits, and at the great crowds of people who throng the grounds. As this is written Monday, we can not say how the attendance this year will compare with last, but there are people there in plenty. The fine weather and the good roads have proved temptations too strong to resist. The camping grounds are full. The hotels and lodging houses are full, and there is every indication that as usual the fair will be a great success. An unusually large number of visitors have come from outside states, people who have relatives at Camp Dodge, and who are improving the opportunity to visit them as well as the fair. Because of the expected appearance of the British fliers Wednesday and Thursday, these will probably be the days of the largest attendance this year.

The opening days of the fair, Wednesday and Thursday, really were preparation days, and there was a reasonably large attendance, but not so large as a year ago on corresponding days. The attendance picked up on Friday, this being Children's Day, when they were admitted free. By this time all the exhibits were in place and the fair was in full swing. Special amusements were arranged for the benefit of the young guests. Judging started Saturday, and people began to come in from various parts of the state. This was Des Moines Day, but the attendance was not so high as might have been expected, with the weather man co-operating in furnishing ideal weather, as he did on each of the preceding days. Sunday is leisure day—music programs featuring the activities. While all the exhibit buildings were closed to visitors on this day, the stock barns were open, and hundreds roamed thru, admiring the different breeds of cattle, horses, hogs and sheep.

In the same building with the war exhibit was a show put on by the United States Department of Agriculture. This is the first time the government has favored the fairs with a display of this kind. It called attention to various activities of the department by photographs and sample displays. The Bureau of Public Roads had models showing how to construct about every type of road to be found in country districts, and it pointed out the difference between right and wrong methods of building roads. Just what the Bureau of Markets is doing for the farmers was another interesting phase of the exhibit. Its experts are keeping live stock feeders, grain growers, fruit men and those growing special crops informed daily by telegraphic reports of the conditions and supplies at the leading markets of the country. The Bureau of Entomology had an extensive display of its work in helping farmers to control insect pests. Work in disease eradication, especially in tick control, was featured. The Forestry Department was represented with a display urging the better care of timber lands, the planting of windbreaks, etc.

Altho not centrally located, the government war exhibit, in old Power Hall, attracted thousands of guests who have sons, relatives or friends with Uncle Sam in France or in training in this country. The exhibit showed the equipment and apparatus with which the boys fight on land and sea. Enlarged photos illustrated scenes in the trenches and showed various activities of the army and navy. There were the giant torpedoes, machine guns, rifles and knives. Wax figures of four soldiers appeared almost human from a short distance away. One was wearing an aviation costume and another was prepared for a gas attack. There were the mask and the breathing tube which fed out bottled oxygen, which means life to those in a gas attack. Miniatures of the big war boats, submarine destroyers and other navy craft were reproduced. The depth bombs, which are the submarine's greatest foe, and the huge mines which protect our principal ports were viewed with interest. No feature of the fair was more popular than this war exhibit, which was the same as exhibited at Missouri and similar to the one at Illinois. After seeing it, one has a keener and more vivid idea of what war is.

There ought to be a special building for exhibits of the state institutions and for those of the colleges. The tent in which the nine or ten state institutions have to demonstrate what they are doing is entirely inadequate. This year the tent was more favorably located than formerly, but it was so thickly crowded almost every hour of the day that little opportunity was given guests for getting acquainted with the exhibits. Each of the following had very creditable displays of their products: Iowa State Reformatory, at Anamosa; Iowa Soldiers' Orphans' Home, Davenport; State Hospital, Independence; State Hospital, Mt. Pleasant; Boys' Training School, Eldora; Iowa State Penitentiary, Fort Madison; State Hospital, Cherokee; Girls' Training School, at Mitchellville, and the Home for Feeble-Minded, at Glenwood. Most of the work at these institutions is done by inmates, and there are no slacker acres in the grounds of the various institutions. Few persons have an opportunity of visiting any of the state institutions, but they are doing work which is of interest to nearly every one. With more room and better facilities for exhibiting the products of their industry, this part of the fair would be one of the best features.

One of the most interesting exhibits to be seen at the fair was the demonstration put on by the state cow testing organization. This year the cows were from herds in Marshall county, and many valuable lessons could be picked out by studying production figures for each of the ten cows. There was not so much difference in the looks of individual cows as between figures showing their profit and production. One cow made a poor record of 136 pounds of fat in a year and a profit of $22.64 over and above feed cost. Two of her daughters also were there, one with a scrub for a sire and the other with a pure-bred dairy sire. Altho the two cows had the same dam, the one with the pure-bred sire produced more fat and more profit in six months than did either her sister or mother in a year. Another cow produced 303 pounds of fat in a year, when kept under bad management. It happened that this cow the following year had better management, and she increased her production to 374 pounds of fat. Cow test association work is being continued under difficulties, on account of lack of testers, but no organization is doing the dairy interests more substantial good.

County agents were too busy at home to make their usual strong collective show this year, only six counties being represented. It takes a lot of time to prepare an exhibit of this nature, and more time to display it. The six counties having booths in Agricultural Hall were Polk, Buena Vista, Guthrie, Marion, Cass and Wayne. The Marion county display was put on by the Pleasant Hill Community Club. A service flag made out of red, white and blue corn featured the Polk county exhibit, 4,190 men being in the fighting forces from this county. The absence of exhibits from several counties that usually are represented was noticeable, and missed, as visitors from different counties like to see how their own county products compare with those of other counties. It is not until one sees the great variety of grains, farm crops, vegetables and other products arranged in neat order that he fully appreciates the different things being grown in his home community. While there were fewer exhibits this year than usual in the space reserved for county displays, the quality and attractiveness of those at the fair were fully up to standard.

For the first time in eight years the railroads granted special rates for fair visitors this year. This was the result of a conference between the state fair officials and railroad heads, held in Chicago some time ago. A rate of one and one-half times the regular one-way rate was granted for a round-trip ticket. Too many passenger coaches are being used for troop transportation, however, for first-class service, but there was little complaint on the part of the traveling public. The usual shuttle train service between the city and fair grounds was abandoned, on account of the scarcity of cars and operators. This threw larger crowds into the street cars and automobiles, both of which were crowded to capacity daily after the first two opening days of the fair. In the matter of live stock rates for exhibitors, it was feared at first that the new administration would not return show stock free of charge from the fair grounds as formerly, but the old rule was not changed. Horses are handled under a separate schedule.

The butter and milk show at the Iowa fair is never so large as one might expect to see, but it always is a show of high quality. The prize winning entries were on display in the butter exhibit booth in the Agricultural Building. In the whole milk class the decision was very close between H. E. Fowler, of Jesup, Iowa, whose score was 95.75, and A. J. Allenstene, of Bremer, Iowa whose score was 95.50. Albert Fenger, of Whittemore, Iowa, had the best butter in the gathered-cream class, his product scoring 96.25, and R. C. Rasmussen, of Crystal Lake, Iowa, was second, with a score of 96 points. In the cheese contest H. A. Kalk, of Sheboygan, Wis., was first, with a score of 94, while second place went to Rudolph Gerber, of Harper's Ferry, Iowa, with a score of 92 points. Awards in the dairy product show are made after careful tests in the laboratories of the pure food and dairy department.

The state organization of the Iowa County Farm Bureaus had a display, showing that the state is 1000 per cent perfect so far as organization in each county is concerned. The first farm bureau was organized in Scott county, in 1912. The growth was slow during the next three years, there being eight at work on July 1, 1913, ten on the corresponding date for 1914, and eleven in 1915. In 1916 the number had increased to twenty, and last year there were twenty-nine. This year there are 100 farm bureaus, one county being divided. Besides the county agents there are 41 home demonstrators, in as many different counties, and there are two state club leaders. The exhibit showed that there are 12,400 co-operators and 33,187 members. This work is supported by the government, the counties and the farmers, the government's share of the $387,340 budget being $180,300.

The college building on the hill always is a place chock full of interesting exhibits and practical lessons. Some worthwhile changes were made in the general arrangement this year, and everything was more attractively displayed than a year ago. A feature of the college exhibit is that it is not simply put on to satisfy idle curiosity, but to teach and to present the lessons in such practical form that visitors can grasp them and remember them. Daily demonstrations in drying corn by artificial means were made by the farm crops department. A farm management exhibit is a difficult thing to make, but Professor Lloyd was equal to the occasion, and his stairway leading to success in farming attracted the attention it deserved. The soils department had a large map of Hamilton county, showing just what a soil survey is, actual dirt of the several types of soil found there being used for the map. How to increase production by means of proper rotation and soil treatment was another feature. The engineering department had a booth showing different types of silos, roads and farm building plans. In the animal husbandry department space, the concrete results of Professor Evvard's work in feeding hogs on corn and corn substitutes with forage were given out, and the exhibit illustrated the modern way of hog raising in contrast to the way of father and grandfather. The same applied to feeding cattle, the value of silage being emphasized. Canning demonstrations were given daily, and the girls in the different teams won much admiration as they performed the actual work of food preservation by the cold-pack method. Literature showing how to make the most efficient use of fuel was given out, and if the advice is followed there will be a marked decrease in Iowa's coal requirements next winter. Those who visit the college building should do so with the idea of absorbing the important facts presented by the various exhibits.

The boys' judging contest never fails to attract deserved attention, and altho it was held on the real opening day of the fair, at which attendance is under the average it was followed on Friday by good-sized crowds. The prizes included eight scholarships, ranging from $200 for the first down to $50 for the eighth best. It was open to any boy under 21 years of age who never had attended college, and who never had stood above fifth place in former contests. Awards were made in accordance with the efficiency with which individual boys judges classes of horses, cattle and swine and samples of corn. Correctness of placing counted 60 points, and reasons for making the placings 40 points, and there were 800 possible points to be made. First prize went to Rex Bull, of Ottumwa, who scored 699 points, and second prize went to Harold White, of Rhodes, who scored 692 points. The others ranked as follows: Stanley Rogers, Troy, third, 682 points; Roger Wilkinson, Mason City, fourth, 679; Vernon C. Peters, Andover, fifth, 678 points; Morris Butler, Marshalltown, sixth, 671; Geo. Rosenfeld, Kelly, seventh, 660; Louis Puck, Stockton, eighth, 657; Harold W. Brown, Woodbine, ninth, 650; Henry Yeager, Woodbine, tenth, 652. In team work, the Marshall county quintet, coached by County Agent W. W. Buchanan, did the best work. The members of this team are Howard Ellis, State Center; Morris Butler, Ferguson; Raymond Rivens, Albion; Howard Soorholtz, Melbourne, and Harold White, Rhodes.

The Food Administration was represented in the building with the war exhibit. According to information given out to the public, great results have been accomplished since the food control act was passed, just about a year ago. At that time the wheat surplus appeared to be less than 20,000,000 bushels, but the nation has conserved, which has made possible the shipment of more than 150,000,000 bushels to the Allies. More than 3,000,000,000 pounds of meat, or an increase of one-third, have been shipped to Europe. Regulation of the price of sugar is credited with $800,000,000, as compared with prices in neutral countries. As to general prices paid to farmers and paid by consumers it is claimed that the farmer is receiving 27 per cent more than he did last summer, while the housewife is buying in the market for 13 per cent less than a year ago. The fair proved an ideal place for the Food Department to acquaint thousands of persons with its work and for these people to get in a little closer touch with what is expected of them than is possible by means of printed matter exclusively.

The fat stock show at the Iowa fair would be a small proposition were it not for the boys' baby beef feeding contest. The more than one hundred entries in this, in which all breeds competed, constituted practically the entire fat cattle show for the different breeds. As noted in the awards, this contest was one of the biggest features of the judging program. At the close of the contest, all the calves will be judged again on individual merit from a killing standpoint, consideration being given for weight, for age, conformation, quality and finish. The 1917-1918 feeding contest is the largest which has yet been held in the state, more than 700 calves being raised by Iowa boys and girls. Each must feed and take care of a calf born between January 1 and September 1, 1917, and of course it was optional whether or not to exhibit at the fair. The final awards do not always correspond with the decisions at the fair, as other points are taken into consideration.

Among the new attractions was the government mine rescue car, together with the practical demonstrations in work of this kind. The car contained apparatus and equipment used in mines after a disaster, and there were gas masks, sensitive birds, surgical equipment and about everything which would be needed in such emergencies. The government maintains eight of these rescue cars in different parts of the country, and one can be rushed to almost any mine within a few hours after an explosion, to a city after a big fire, or to a flooded district. Just what the men have to do in mine rescue work was demonstrated in a specially-built glass house on Main street. This was filled with poisonous gases, such as are encountered in mines, and which were so dense one could hardly see the demonstrator within. The masks worn are similar to trench masks, which make German gas attacks of minor importance, the wearer being fed pure oxygen for breathing by means of a tube connected to a light container.

The biggest part of the machinery exhibit consisted of tractors, which were represented in large numbers. Iowa is a fertile field for the sale of tractors, and manufacturers and dealers like to take advantage of the Iowa State Fair crowds to display their machines. There was no lack of interest on the part of the rural visitors, and city guests watched the demonstrations out of curiosity. Scarcity of labor thruout the state has made farmers devote more attention to machines for replacing human hands, and at no fair were farmers more on the lookout for implements and machines which either would replace men and horses or make the available supply accomplish more.

As usual, the center of interest in the Women and Childrens Building was the baby health contest. Judging and examinations of babies went on in the forenoon. In the afternoon an eager group of women watched living models on which were displayed art and conservation in clothing, showing practical and pretty clothes on living models. An interesting exhibit was that of the Iowa State Board of Health, illustrating by charts and models conditions of health and disease. Red Cross headquarters was thronged with inquirers for patterns, plans and information. A large doll was used as a model for demonstrations. One of the prettiest performances staged in the building was the Pageant of Iowa Wildflowers. Miss Hathaway, of Des Moines, the originator of this pageant, was present every afternoon, for a conference on pageants and pageantry.

Rabbits and Belgian hares were in evidence at the Iowa State Fair this year, joining the ranks of meat producers, to the great satisfaction of the pet stock men.

THE STOCK SHOW.

With the winning of the war the main business, and the consequent shortage of help and feed, the live stock exhibit at Des Moines last week was all that could be hoped for. In both numbers and quality, it was up to the high standard set by the Iowa State Fair some years ago, when Iowa took the lead over other state fairs in the magnitude of its annual exposition of pure-bred stock, horses, cattle, swine and sheep. But the live stock show on the whole was not up to the big showing made at Des

Moines the past two years, when the showing of beef breeds and horses compared very favorably with the big showing made at the International, while the swine show excelled all other state fairs, and it is safe to say it will do so this year.

The beef breeds are not making as strong a showing in some divisions as last year, but the cattle, with few exceptions, are well fitted, and some of the best specimens of the different breeds are on exhibition.

IOWA BOYS' CALF FEEDING CONTEST.

The biggest judging event of Saturday, and the one which required the keenest work on the part of the judge, and which attracted the most interest, was the boys' baby beef contest, in which 104 animals were entered. Altho there were thirty-three prizes, there were not enough moneys, as many of the boys had calves entitled to prize recognition. The prizes ranged from $40 for the best down to $10 for those from twenty-ninth to thirty-third. Charles T. Ryan, of Irwin, Iowa, was the fortunate winner of the first prize, on a red Angus, which was also the champion in the class for grade fat Angus cattle in the open classes. Second place was finally awarded to Josephine Garden, of Wapello, Iowa, on a pure-bred Shorthorn, which was champion in the open class for cattle of this breed, and which was a close contestant for first prize. Charles Warren, of Gilbert, Iowa, won third place on an entry which also won him championship ribbon in the grade Shorthorn open class, and fourth place went to George Rosenfeld, on his champion pure-bred Angus. These boys are the future cattle feeders. The experience in fitting their animals and in showing them not only in competition with one another in the calf-feeding contest, but also in open competition with old, experienced feeders in the open classes, has been a valuable lesson to them. By studying the fat cattle show in the open classes, it will be observed that the bulk of the awards went to those who won in this contest.

IOWA'S ANSWER TO WAR-TIME DEMANDS.

Breeder's Gazette.

The Iowa State Fair escaped a frost. It thus beat its unenviable record of the past two years. The fair itself was far from a "frost." In its financial aspect it takes imposing position among the former exhibitions of this generously-patronized institution. The 67,000 people on Thursday was a record, and the total attendance will fall only about 25,000 short of the 350,000 last year which marked the climax. The receipts of $240,000 will run probably less than $5,000 behind last year. It had its weak spots in exhibits, as has every fair this fall, but the standard by which it is judged has been set so high that considerable drop may ensue without bringing the exhibition near the mediocre rank. Its lapses were lost sight of in the big message it bore of farm prosperity and enlarging and insistent demand for yet greater production. It was a war-time fair, emphasizing the present world's conflict and seeking to lead the way to more effective participation on the part of the agricultural forces of the central valley. It was a live, palpitant fair, registering visibly the pulse beats of the food production forces. It was a credit to its projectors, an accurate index of the loyalty of Iowa farmers, and an assurance to the nation that the cornerstone common wealth of its agriculture viewed accurately the situation with a solemn sense of its responsibility.

It was not a year for material expansion or improvement in the plant. Aside from laying a concrete floor in the power hall of about 36,000 square feet, and adding about 25,000 feet to the cement walks, no expenditure was made other than that necessary for maintenance. Further needed expansion of exhibition buildings on this remarkably favored fair site awaits more propitious times.

It was a real war fair. Interest centered in the Government war exhibits, in the education work of the Iowa State College and the boys and girls' clubs, and in the magnificent women's and children's building which received the devoted enthusiastic support of some of the leading women of the state. Woman's activities in war work found ample illustration. The baby health contest was liberally patronized. An original pageant entitled "Festival of Iowa Wild Flowers," with its interpretative dances and old Indian melodies, was staged by school children of the state and afforded delightful entertainment. The serious side was substantially exemplified in the domestic science demonstrations and in the novel program teaching art and conservation in clothing. The thrift section of this feature taught the possibilities of made-over garments. Motion pictures were liberally used in entertainment and instructional ways. Accurately apprehending that the message of the war could be effectively delivered to the women and children of the state, the fair thus chained their attention, enlarged their vision, and stimulated their activities.

The Iowa State College made irresistible challenge in a practical way. A farm corn drier occupied prominent position in its building, enforcing its advantages in permitting corn to be husked a month earlier, lessening labor, putting the grain on the market when cars are available and insuring a better price. Startling was the assertion that the efficient use of man labor on the farm would increase food to an extent that would feed 3,000,000 soldiers for four and three-quarters months and release 44,000 farm hands for the army. A survey of 12 townships in the state led to the conclusion that the quarter-section farmer could use man power more efficiently if he bought or rented another forty. It was a serious indictment of slackness in modern farm management.

Models of feeding shelters and equipment illustrated grandfather's, father's and son's way very graphically. Conservation and sanitation were the key-notes. The feeding of inferior live stock was declared a crime, and slack and wasteful methods can not escape the same indictment. Iowa's fields are no longer virgin. The boast of the Hawkeye State farmer that his soil is inexhaustible finds ample refutation in tests on 44 different types of soil, all of which showed profitable responses to fertilization. Manure increased yields, limestone more, limestone and rock phosphate yet more, and limestone and acid phosphate a little better. Studies will be continued as to the lasting effects of all these forms of fertilization. Meanwhile the illustrations in the comparative yields of clover and grains carried conviction.

Fewer county and individual farm exhibits graced the agricultural building than of late years, but they were of a high order of excellence in character and artistic arrangement. Horticulture took more prominent place, the early apple displays indicating an abundant crop. The state is hard hit in its southern and particularly its southwestern sections by the drouth. The small grains were in generous yield the state over, and its northern half has never faced so magnificent a harvest of corn, right at the cutting. It is possible that the yield of merchantable corn may exceed that of last season.

More machinery found place in the displays than last year, but vacant spaces under cover and in the open were quite noticeable. Silo town grows, significant fact. Almost every acceptable type of silo now finds illustration on the grounds of this fair. Big machinery displays were present, and tractors were numerous. The auto exhibit was a little short, but trucks filled the gap somewhat. For the first time in the experience of a third of a century of this reviewer of big fairs the exhibits contained not one single buggy or carriage. Truck and auto accessories bulked large. So magnificent a Machinery Hall should not afford a single vacant space.

Swine and sheep filled the remarkably large expanse of departmental equipment. If all entries had reported tents would have been required to accommodate the overflow. Sheep commanded high compliment in nearly all sections, and swine presented some memorable exhibits, with marked deficiencies in other breeds. Cattle and horses shrank in numbers notably. This was needless in cattle. The stiffneckedness of the managers of the Illinois and Iowa state fairs cost both fairs an appreciable number of desirable stock exhibits. Illinois celebrated its centennial of admission into the Union and in order to observe punctiliously the chronological date, set its two weeks fair far ahead in the season, but required its live stock to attend only five days. Iowa, without warrant in the equities, demands ten days of its exhibitors. Illinois would not release its stock a day earlier than usual, and Iowa would not accept entries that were not in their stalls on Friday preceding the chief judging week, although in other years stock had been admitted to the grounds on Sunday and Monday. Neither fair would give an inch, and a lot of exhibitors, under heavier expense than ever before, were obliged to lose a week's earnings. It is not a creditable chapter in fair management.

THE BEEF CATTLE.

The Shorthorns, Herefords and Angus filled the arena with attractive exhibits and drew crowds of enthusiastic cattlemen each afternoon that they were on view. Splendid uniformity of type prevailed throughout most of these classes. Fitting had been masterfully done and breeders evidently figured that the prizes and honors were worth the cost of feed. Culling had been done at home, for all of the cattle brought before the judges were worth careful consideration. Smooth even covering was the rule, rump patches and rib rolls were scarce. In these respects the show marks progress. As usual the futurity calf classes were large and attractive. Some good show animals were uncovered in these events for the first time.

THE SHORTHORNS.

The Shorthorns suffered by reason of inability of some exhibitors to ship their cattle from Springfield, Ill. The number at the fair was 115—a considerable falling off—and the distribution among twenty breeders gave the show plenty of competition to balance the deficiency in numbers. The work of ribbon tying was entrusted to Leslie Smith, St. Paul, Minn., and he discharged the duty capably. His well-known insistence upon masculinity in bulls and femininity in cows accounted for a few decisions which some onlookers did not understand. He picked the winners with a breeder's eye to their usefulness. The ready winner among the three white aged bulls was the much-admired Knight Avon by Count Avon from Rockwood Farm. He has a clean-cut masculine head, strong crest and very straight topline without a depression anywhere. He has an exceedingly deep chest, smooth even covering, quality everywhere and very stylish bearing. He shows himself—a very notable stamp of an impressive sire. This bull carries his flesh more smoothly than the larger, wider Herkelmann entry

Cumberland Standard, and he in turn displays more quality than the Anderson bull that came last. Interest ran high over the seven two-year-olds. Uppermill Farm's roan Villager's Coronet was clearly the winner. His burly pattern, balanced proportions and straight even lines, carrying out behind to exceedingly wide hindquarters, distinguish him as a remarkable young bull. Now he is carrying thick flesh in the smoothest, firmest manner. He went right on until he carried all the purple ribbons in sight. Right next to him in class stood Miller's roan and white Dale Cumberland, a compact nugget of beef from his very deep front end to his bulging but not very deep thighs. He looks rather small next to Loveland's third-prize roan Ranford but beats the latter in neatness of hips and thick flesh. This third one is a big deep-bodied bull and lower-set and covered thicker over the ribs than Brown's roan Royal Radium. Three senior yearlings did not make a strong class. Nelson's roan imp. Lovelys Knight has suitable size and carries much beef from his well-covered back to his full twist, but he is not nearly so smooth as the red Sultan's Model shown by Herkelmann, whose masculine head and horn mark him as a sire prospect. This red bull is lower-set but not so large or smooth as Miller's white Superior Cumberland, which had to be content with third place. A rather easy victory was scored by Miller's roan Cumberland's Choice in the next class of nine junior yearlings. He looked big in this company and his very straight even lines, great spread of beam, elegant shoulder and deep chest mark him as a beef-maker of a very high order. Toyne's very level-topped roan East Lawn's Champion, Jr., followed naturally by reason of his deep form, thick loin and very smooth, firm covering. McDermott's red Crowned Viscount looked rather small in such company, but he is a low-set meaty fellow with a bull's head, so he got in ahead of Dubes & Ohlson's big white thin Village Golden.

Real enthusiasm awoke over the futurity of two dozen senior bull calves. They were a grand lot of prospective sires and furnished the junior champion of the show in Pritchard's roan Captain Clarion, a son of Dale Clarion. He is very level and long with remarkably full hindquarters and a head full of character in spite of his broken horn. A smaller calf is Mann's roan Gainford Guardian, but he is a masculine fellow with a strong back and he could hardly be beaten in handling quality. He fit in nicely to second place just ahead of Pritchard's other roan Dale Clarion calf Select Dale, not big but close to the ground and tightly packed together. Another son of Dale Clarion, a roan and white with less flesh but considerable stretch and ample breeches, swelled the Pritchard winnings in this class to three ribbons. The younger calves made another strong class in which all of the first five animals were highly praised. The victor was furnished by the Herkelmann herd. He is a roan son of True Cumberland 3d, not a big calf but smooth as an egg, straight in all his lines, and remarkably covered over the back. Pritchard's roan Dale Clarion calf Victorious Dale is not so neat at the tailhead but he is meaty, thick through the thighs and firm-fleshed. The Villager roan shown by Uppermill in third place is not so even in topline but possesses beautiful character and much promise. He beat Miller's rather spare-fleshed but growthy white son of Parkdale Baron and this one in turn came ahead of the small mossy-coated thick level roan by Royal Victor with which Graham secured fifth prize.

Four old cows with calves at foot were headed by Uppermill's big roan May Sultan, sweet as ever, immensely wide and level over her top and having a very good mossy dark roan heifer calf which later won second when shown alone. May Sultan finally became the senior champion. McDermott's white King's Gift's sweet front, beautifully smooth form and large udder made her a strong rival for first place. There were only three two-year-olds and Miller had the outstanding winner in his roan Choice Mayflower, largest and sweetest of all and covered with firm even flesh. The second-prize red from the Loveland herd is small but she is smoother than Toyne's big fleshy white that brought up the last place. Among seven senior yearlings Pritchard's roan Lady Susan by Dale Clarion was thickest in the thighs, wide all through and very feminine. She came first. Probably McDermott's second-prize roan, Miss Cumberland, is just a little sweeter and smoother, and she is very compact and larger than the third one, Nelson's roan Lady Augusta 9th, which looked small standing just ahead of Upper mill's white Villager's Lavender, the largest of all and very thick-fleshed but not so sweet as the others. McDermott led off the eleven junior yearlings with his roan Fair Gift 2nd by Cumberland Marshall. She has a very deep chest and well covered back and her front is enticing. A heavier hindquarters is possessed by Pritchard's roan and white Dale Bangle, and this one is thicker in loin than Miller's sweet meaty roan Cumberland Bess 2d.

Fifteen futurity senior calves came out and a very strong line-up resulted in spite of the fact that the first three are all a bit prominent at the tail head. Pritchard's Dale Clarion roan heifer Fairview Lady 2d that won first is large, sweet of front and big behind. McDermott's Cumberland Marshall roan Rosa Hope 21st is also big and great in the thighs and she is more level of top. She is scarcely so attractive of face as the other Dale Clarion calf, a light roan that came third. A dozen junior calves landed Herkelmann the winner on True Cumberland 3d's roan daughter Village Beauty 4th, which is remarkably meaty all over and exceedingly smooth and firm, Uppermill's Village May is the dark roan daughter of the champion cow and possesses her dam's great width and thick thighs, but she was crowded right up by a pair of sweet roan Cumberland Marshall heifers that are also genuine meat-makers.

THE HEREFORDS.

Herefords made the greatest show numerically of any of the beef breeds and the mere mention of the names of exhibitors is assurance that the display was of the very best. Eleven herds were on hand and included six to twenty-six cattle each and a total of 136. The judging drew close attention and general approval as done by Henry O. Moxley, Shelbyville, Ky., assisted by Chas. Escher, Irwin, Ia., in a few classes where animals were entered in which Mr. Moxley had at one time had an interest.

The aged class brought four bulls together, three of which are of particularly impressive form. Yost's very low-set Braemore looked the winner's part. He is very smooth and level over the back, loin and rump and his full breeches and finely chiseled but masculine countenance stamp him as a full package of the finest beef with the capacity to breed on. A more burly bull is Enochs & Wortman's thick fat Prince Rupert, very deep-chested and massive but not so smooth and firm as the winner. He in turn is more level of back and loin than the big long-bodied Golden Lad shown by Cassidy for third prize. What was rated as the best bull of the breed on show came out at the head of the next class. This is Harris' two-year-old Repeater, Jr., and he still does his famous sire distinct credit. He carries his very wide deep body easily on very short legs and his bulging thighs and resilient quality of evenly spread covering were the admiration of all. His character of front is also up to the family standard. Yost's second-prize Arranmore is a bit larger-boned, very masculine of presence and packed full of meat. He is more evenly covered than Enochs & Wortman's big impressive Jolly Donald, the third in line. Senior yearlings were not so high-class. The first one, Good Donald 3d, is a thick deep-ribbed fellow of rugged appearance but he is coarse at the tailhead and not so evenly fleshed as the third bull, the meaty compact curly Hazlett entry Beau Baltimore 25th, whose excellent type and bold front supported a strong claim for preference at least over the second-prize bull Beau Blanchard 53d, which is lower of back and barer of rib although spacious of middle. The judge's preference for a tidy makeup was evident in the next class in which he chose the light-middled Hazlett bull Bocaldo 11th for first place over the other ten junior yearlings. He is very level of back and richly covered there with flesh of remarkable quality. In this texture he is far ahead of the Harris bull Repeater 129th, which is a real nugget of beef and more level of rump than the winner. In fact for a long time they were lined up by the judge the reverse of their final positions. The Harris bull has a wider bread basket than the winner and so has the Hazlett third-prize Hazford Rupert. This one is also very lowset and wide and a typical meat producer.

Harris was convincingly represented in the class of senior calves by a pair of inseparable Repeater bulls, the tidier of which gained preference. He is a very meaty fellow but higher at the tailhead and not so thick in loin as his very short-legged mate. Hazlett's third-prize calf by Publican 4th is a distinctly quality type. Yost had a sensational light red youngster that won in the junior calf class. He is a son of Bonnie Lad 20th, only two months old, but fleshed to match those approaching the age limit. Smiths had two good January calves that followed in the lineup.

A pair of short-legged aged cows were clearly the best in their class but some difference of opinion prevailed as to which should wear the blue ribbon. The final winner is Enochs & Wortman's exquisitely finished Dolly Rupert, wide of top and mellow and smooth as ever. Her very thick loin and full hindquarters complete her extreme beef type and her very sweet countenance aided in determining the favor with which she was regarded as compared with the larger but somewhat rougher Matron Donald from the Harris herd. Both of these are more deeply and neatly covered than the third-prize Mississippi cow or the longer-legged cow from Kansas that stood fourth. The winner of this class kept right on with that record to the chief position in the list. Something of a close contest developed among the eight two-year-olds in which Hazlett's wide-ribbed strong-backed Yerba Santa stood at the top for some time. Finally after minute comparison the judge shifted her down one place and gave the preference to Yost's Bonnie Doris. This one is similarly wide and she carries more meat in her thighs, while her beautiful horn and general refinement of face and outline are quite pleasing. Two larger but less compactly made cows came third and fourth for Harris. Eleven senior yearling heifers conceded the honor to the rather small but beautiful Belle Blanchard shown by Engle. She is very close to the ground, exceedingly short in neck, wide from her rib to the end of her rounds and stamped all over with quality. Another small and neatly fashioned heifer is Yost's Bonnie Madeline which was finally moved up a notch at a time from fifth place to second. This left the large thickly covered Hazlett heifer Bloss 16th in third place and just above Yost's Bonnie Easter, which is of very similar type. These two are not so smooth about the pinbones as the first pair. This was a very strong class. Junior yearlings counted thirteen and included a beautiful pattern of the breed in Yost's Bonnie Augusta, which later bore off the junior champion ribbon. She was mapped out with a straight-edge, and a very long rump is about as distinctive as her very closely packed flesh. She is a bit larger but scarcely so thick through the bottom of her rounds as her mate, Lady Aster, that came next. A roomy level-backed miss shown by Engle in third place had just a little more finish to her covering about the tail-head than the Harris fourth-prize-winner.

When the senior heifer calves, sixteen in number, filled the ring with white faces they drew about them a throng of admirers which kept a couple of soldiers busy making room for the judge to work. The Harris entry, Miss Repeater 141st by Repeater 57th, is one of the shortest-legged ones in the class and her sweet front, meaty back, loin and hindquarters, all evenly blended, gave her the title to a blue ribbon. She is straighter in back and neater at the tail-head than the similarly thickly covered Engle calf sired by Beau Blanchard. This one came second and barely beat a straight topped yellow red daughter of Bonnie Lad 20th from the Yost herd. Numbers fell down to eight in the junior heifer calf class. Four of them are fine prospects and the best one appeared to be Yost's elegant nugget of beef Donna Woodford 5th, sired by Woodford 1st. She looks like the last little pea out of the same pod as the other prizewinners from the Yost herd. A Don Perfect 4th heifer entered by Turner is very sweet and promising and looked appropriately placed second.

THE ABERDEEN ANGUS.

Seventy-five doddies fully upheld the black breed's reputation for thick beef, shimmering quality and convincing uniformity. Ten herds had entries and evidently the owners of all learned their lessons in breeding at the same school. As compared with last year the display had the support of one or two of the most prominent herds of the breed which were absent at that time. Economy of feed was the excuse given then for not preparing cattle for participation in the show, but time has accustomed breeders to the all-around elevation of prices on both cattle and feed. Quite a large gathering of breeders of blacks was on hand to study the animals as they passed in official review before Harvey Hess, Waterloo, Iowa, who assigned their positions.

The single aged bull brought out was Fitch's three-year-old Berber, a thick block of beef and ready for rivals aplenty. Three two-year-olds proved more interesting, especially as one of them—the Escher & Ryan entry Enlate, a son of the noted sire Erwin C—looked like a winner anywhere. He is one of the most compact and smooth big bulls ever seen in an American showring. He is all meat of the finest texture excepting just enough frame for successful locomotion and a head of commanding character. He was the natural choice for grand champion honors. The Fitch entry Karo F. is larger-boned but coarser in hide and not so smoothly fleshed. He is larger and has more character than the thin bull shown by Gardner at the foot of the class. Senior yearlings also numbered only three. Another Escher & Ryan entry, Ben Marshall, was the successful one, and although he became the junior champion later on he had no walkaway of the contest against the big rugged Fitch bull Quito K. The winner is smoother over the shoulder and has somewhat more quality all through. Both are meaty and thick from rib to round. They are larger and stronger backed than the Gardner entry. A stronger class on the average was that of five junior yearlings. Turner's Faultless Pass lived up to his name so far as this event is concerned. He has a wonderful development of thighs and is a richly fleshed masculine chap of symmetrical proportions. Escher & Ryan's second-prize entry Black Erwin E is one of the good sons of Erwin C. He is larger than the winner and adheres to an excellent type. He is more evenly covered over the back and loin than the very long Fitch bull Quorum 2d that stood third. The senior calf class also contained five young bulls. Lee's entry, Eston Blackcap by Eston Lad, conforms closely to the pattern the judge sought presistently and he is larger than Escher & Ryan's son of Earl Marshall named Espoir Marshall. This calf is apparently one solid piece of beef. Neither of them is quite so neatly fashioned at the tail head but closed in better at the shoulders than the Hartnell & Lang third winner. Escher & Ryan gained precedence among the five junior calves with one of Earl Marshall's sons called E. Pluribus Unum. He is the smoothest-fleshed calf of the lot and he is larger, stronger in back and more correctly spread out in rump than Rosenfeld's second-prize Kenton 2d. A very neat little fellow from the Roberts herd won third.

Four splendid aged cows met for a rating and it seemed to be real hard work deciding between the first two. The award was finally given to Escher & Ryan's Erica McHenry 39th, with the red tie to Roberts' cow Hillsdale Pride. Both are four-year-olds and have their shining hides packed full of beef. Excepting that she is a bit rough at the tailhead the Erica cow is firmer in flesh, and she is also somewhat sweeter of front. The second cow is a little more rugged and has more bone. These two are much more neatly fleshed than the third cow and she wins over the fourth by reason of more acceptable scale. The five-pointed two-year-old class resulted in another blue ribbon for Escher & Ryan, this time on Blackbird Gift, not very big but a real nugget of firm flesh with breed character beside. She is straighter in topline than the long-ribbed rugged Roberts heifer that came second. Another Roberts entry, wide and thickly covered, stood third.

There were twice as many senior yearlings and the judge spent a long time looking them over. He finally put the Roberts heifer at the front. She has worlds of quality apparent in her thick even back and sides and her long wide rump, in this respect surpassing the Escher & Ryan entry that stood second. The latter preserves her height more symmetrically from front to rear than her large meaty mate. Junior yearlings staged a lively contest in which Escher & Ryan scored a victory with the Earl Marshall heifer Blackbird Missie 15th. She is the more attractive one of a strong pair from this herd. A Roberts entry slipped in between them, and one from the Rosenfeld herd stood fourth. The senior heifer calf class was a large one and represented the get of sires whose established fame was merely strengthened by their successful appearance. There were not so many junior heifer calves but they were finely formed sweet little youngsters, prophetic of their matronly qualities some day.

COW TEST ASSOCIATION EXHIBIT.

This exhibit prepared by the dairy division of the Iowa State College Extension Department was composed of 10 cows taken from the Marshall Co. Cow Test Association. The object of the demonstration was to emphasize breeding for production and better management. Two families of cows were shown which demonstrated the possibility of improving dairy herds by the use of purebred dairy sires. A native red cow and her two daughters, one sired by a grade bull and the other by a Guernsey bull, composed the first family. The old cow produced 139 pounds fat and made profit of $32.54 in six months. The daughter by the grade sire made 160.2 pounds fat in six months, but her profit was only $26.66; the other daughter made 160 pounds fat in six months as a three-year-old and her profit was $38.48.

The second family was composed of a grade Holstein and her two daughters, both by a Holstein bull. Both daughters did better than their dam.

SWINE SHOW.

Although such factors as scarcity of feed, and the poor pastures in many parts of Iowa have worked against the most rapid development of the swine industry, yet on the whole the swine show was the best balanced of any of the live stock exhibits and maintained the pace set in other years. The classes in the leading breeds were well filled, some numbering forty animals of an age. The futurity classes arranged for by the different breed associations were hotly contested and provided some of the best exhibits. Most of the hogs were shown in fair flesh; the high price of feeds kept off in some degree the surplus fat seen in other years. It was the hogs with strong backs, plenty of length, possessing strong bone and standing up well on pasterns which won rather consistently. The hog exhibitors were in a good mood for many sales were made of breeding stock at very remunerative prices. Two thousand two hundred and thirty-six hogs were on exhibition, which compares very favorably with last year.

A very interesting and creditable feature was furnished by eighty-four pigs entered by forty-two boys and girls in the Iowa pig club contest. The awards in this contest were made by H. H. Kildee, Ames, Iowa.

It was the prevailing opinion that from the standpoint of balance of classes, uniformity in type and quality, that the Poland China show exceeded that of other breeds, if not that of any previous year. Approximately 400 animals were shown. W. L. McNutt, Ord, Neb., found many difficult classes. His work for the most part was satisfactory. The aged board class brought out some excellent individuals, headed by Col. Jack, the 1,050-pound board belonging to Fred Sievers. Gersdale Jones 2d, in second place, was shown in breeding condition. He was the stronger in back and bone and stood better on his feet. Robert Halford upset calculations when he drove out Big Improver. This boar, while a trifle small for a senior yearling, had the strength of back, smoothness and bone to win the junior championship and later on grand championship. Big Improver was a little mate to the grand champion sow at the Illinois State Fair this year. Grand female championship was won easily by a sow belonging to Fred Sievers.

The Duroc Jersey show was as strong in numbers as last year, but the quality and size were somewhat lacking. The boar classes, while having a few individuals which were worthy of the top places, contained a number which were not up to what might be expected. The sow classes were better balanced and brought out some very good specimens. The futurity class of sows was excellent. The J. D. Waltermeyer & Sons' herd from Melbourne, Iowa, won many of the firsts and grand championship on the three-year-old sow Grand Lady 65th. The board Pathfinder's Likeness, a senior yearling with lots of bone and stretch, was grand champion. Charles A. Marker judged. Breeders of Duroc Jerseys had very little trouble in disposing of their surplus stock.

Chester White breeders put on an exhibit of superior quality, although not as strong in numbers as last year. It was very evident that the adherents of this breed are attempting to develop a hog with more scale, stronger bone and shorter and straighter pasterns. Alden Anderson, Story City, won grand championship on the sow Madeline. E. L. Nagle had grand champion boar in the Golden Model, a junior yearling, winning over Prince Big Bone, grand champion at the National Swine Show last year. Prince Big Bone was shown a trifle light in flesh. L. C. Reece, Prescott, Iowa, tied the ribbons on the sow and group classes, the boar classes having been judged before his arrival, by J. W. Brendle, W. T. Barr and W. E. Gaffey.

Sixteen exhibitors of Hampshires had entries in these classes. The show was larger than last year and was believed to be about the climax exhibition of the breed. It was made up for the most part of well grown, good quality animals. The boar classes were not as strong as the sow classes. Messenger's herd from Keswick, Iowa, was the best balanced, and to it went most of the blue ribbons and championships. Chas. A. Marker, Auburn, Ill., acted as judge.

THE SHEEP SHOW.

The sheep show produced evidence that the Iowa shepherds are doing their bit, and a great deal more, to feed and clothe our soldiers and civilians at home and abroad. While many of our shepherds have entered the service, the breeders are taking up the work and the condition of the woolly coats evidenced no lack of skill on their part. Had all of the entries arrived, at least thirty additional pens would have been necessary to accommodate the flocks. Many new breeders were exhibiting and while they stood quite often toward the lower end of the line they all say that they will be nearer the top another year.

That the Iowa farmers are intensely interested in sheep farming was shown by the large crowds which constantly thronged the sheep pavilion. Breeders declare that they could have sold twice as many sheep as they offered. The $250 sheep went almost as fast as the $75 kind. From the time the first flock came into the pavilion until the last one went out, buyers were constantly trying to supply their wants. Many inquiries were made as to where a breeding flock of three to five hundred ewes might be secured.

While a few imported sheep were shown, the majority were Iowa-bred. Only two exhibitors reported from outside the state.

The wool show, while not quite up to standard in quantity, surpassed former exhibits in quality. The shearing contest attracted as much attention as usual. Classes were opened for both professionals and amateurs. Contestants were judged on time, method of shearing, condition of fleece and condition of sheep.

In most of the breeds competition was keen with very little difference between the top three or four individuals.

W. S. Nichols exhibited three sample pens of common breeding ewes and feeder lambs, and with this sample sold over 20,000 head of sheep, showing conclusively that the Iowa farmers really mean business when it comes to sheep farming.

Wm. F. Renk, Sun Prairie, Wis., handed out the ribbons in all of the mutton breeds and his awards were well received. Awards on the fine wools, the wool exhibit and shearing contest were placed by John E. Webb, Southport, Ind.

Competition was especially keen in the Shropshire classes. The four leading winners were E. L. Bitterman, Mt. Pleasant, Iowa; C. W. Chandler, Kellerton, Iowa; A. T. Jones & Son, Everly, Iowa, and H. D. Eddingfield, Mt. Pleasant, Iowa. Representative Hampshire flocks were shown by John Graham & Son, Eldora, Iowa, E. L. Bitterman and Iowa State College.

The Oxford show far surpassed any exhibit of the breed ever held here, in both numbers and quality. C. C. Croxen, West Liberty, Iowa, and John Graham & Son gathered in most of the blue and red ribbons, while Richards & Richards, Lodi, Wis., Iowa State College and Frank Osen, Anita, Iowa, all had their flocks in typical show form. The Southdown show was not up to the standard in numbers. Iowa State College showed an especially well fitted flock. E. L. Bitterman and Turner Bros. of De Witt, Iowa, penned some excellent individuals.

The Cheviots were stronger this year than usual. Richards & Richards, W. A. Taylor & Son, Ames, Iowa, and a new exhibitor, Elmer Reed, Mt. Pleasant, Iowa, furnished the competition. After the show Mr. Reed sold his entire flock of Cheviots to H. H. Reed, Marengo, Iowa, and will get together another flock. The Cotswold show about equalled usual standard W. A. Taylor & Son, Joe Edgar, New London, Iowa, and a new breeder, Geo. E. Husted, Russell, Iowa, presented the contestants.

The fine-wool show, while of excellent quality and type, lacked the usual number of entries. Richards & Richards, Joe Edgar and a new breeder, A. F. Arnold, Mt. Zion, Iowa, were the exhibitors in both the B and C Merinos. C. S. Bradt, Araphoe, Neb., had ribbons on their entries of Rambouillets.

The milch goat exhibit included about 35 goats and interest or curiosity was evidenced by the crowds around the pens. Nubians were shown by N. Bartholomew and O. R. Sheets of Iowa and Mrs. Jessie H. Watson of Pennsylvania. Mr. Bartholomew had an exhibit of grade Nubians and grade Toggenburgs. Geo. Brideson & Son of Iowa exhibited a pen of native goats. Dr. D. H. Miller, Council Bluffs, Iowa, placed the awards on the goats.

THE HORSE DEPARTMENT

A high-class show of horses was expected at Des Moines and in character of animals it measured up to that standard. Numbers were considerably smaller than usual. Some of the larger exhibitors of former years were absent and some small breeders were showing who have attempted little or nothing of the sort before.

An unfortunate arrangement was the judging of some of the most interesting mare classes on Saturday before the principal week of the fair. Of course very few horsemen cared to stay away from home over Sunday for the sake of seeing a few classes judged on Saturday. As a result most of the interested visitors did not arrive until Monday morning as usual and exhibitors had to show their mares on Saturday before a very small audience. There was plenty of time to have judged all of the breeding classes of draft horses during the first three forenoons of the principal week of the fair. Presumably the horse department is run for the benefit of horsemen, and accordingly their conveniences should be considered by allowing them to see all of the draft horse breeding classes by spending three days at Des Moines instead of five.

The horse barns proved to be one of the great attractions of the fair and were always crowded with interested and inquiring people. Wilson & Co. had their splendid six-horse team of bay Clydesdales on the grounds for exhibition purposes, and these were universally admired for their scale, splendid legs and stylish appearance in harness.

THE PERCHERONS.

Percherons numbered sixty-seven and came the nearest of any of the draft breeds to measuring up to breeders' expectations in the showring. Classes were large enough to make real sharp competition, with no prizes falling to unworthy tail-end animals. The tops of the prize-lists were occupied by horses of the same high order of type and draft excellence that has characterized this show for many years.

Colors ran noticeably to blacks. Some classes were all black. One reason for this is the strong demand for black Percherons from breeders farther west which has influenced many corn belt breeders. Certain it is that blacks are on the increase in the Percheron breed, especially west of the Mississippi River.

Breeding operations are outlined for the future with a continued or even an increased outlet expected for the surplus Percherons produced. More study of sires was evident at the ringside than has been the case heretofore. Much discussion ran in that vein. Good colt-getters are admittedly scarce and every breeder seems to be on a still hunt for a horse of proved worth as a sire or else one whose sire has been getting many of the right kind.

The pleasant duty of passing opinion upon so creditable a collection of Percherons was delegated to Wm. Bell, Wooster, O., and his work was generally approved.

Aged stallions numbered eight, three grays and five blacks. Interest at the ringside immediately centered in the flash black Mitral later made grand champion. He was imported a few years ago and is now owned by Singmaster. In neck and croup he might be a bit larger, but otherwise he is a wonderfully well balanced horse with a sire's head and with legs of the fashion and finish that stay sound even under old work horses. Mitral was popularly accounted one of the outstanding horses of the season. Right beside him in the line-up stood Barnum 2d, whose sire Barnum was also the sire of Singmaster's Philix which won so many first prizes last year. Barnum 2d is a black and was shown by his breeder, C. P. Quirin. He was not so well fitted as the winner but is of similar type and powerfully built. The blocky big-boned Truman gray Onuphre is an extra good mover and came in third place ahead of a big black from the same stable. Eight three-year-olds made a class from which five blacks were selected for the prizes. A Singmaster pair came into the first two positions. The first one, Mara, is a big, splendidly balanced, fine-fronted colt with a very business-like way of going. He has more pleasing character than the second colt, Tony, whose splendid back and croup command admiration. Casey had the big-boned rugged colt named Harker which stood third and Hoit had a well proportioned colt Olbertan for fourth place.

Eleven two-year-olds were brought into the ring and four Singmaster entries sired by Jalap drew much favorable comment. All four of them landed within the money and a black named Maple Grove Gislain got the blue. He has a neck permitting plenty of style, a shoulder insuring an easy step and his legs are of the rare durable sort characteristic of Jalap colts. The second colt, a gray called Maple Grove Fulton, has a more attractive head, eye and ear and a more level back and croup, so some breeders admired him even more. Next came a black of substantial build and especially pleasing underpinning and he was followed by a third one of the Jalap colts, a grey much on the same pattern as the first two. The fourth Jalap colt won fifth prize.

The futurity yearlings numbered eight and made a very attractive class. Singmaster's black Jalap colt Rockwood Jalap had a clear title to chief honors. He is a very stylish fellow, the tallest of them all, with long neck, sloping shoulder, short straight back, big hard bone and a remarkably strong and well proportioned front leg which should stay sound forever. He is a splendid actor as well. He is not so fat and thick of middle but has more character and larger bone and feet than the weighty Champlin black Iran Kesako which came in second. A somewhat smaller gray is Singmaster's third-prize Smith Creek Lagos, which does his noted sire much credit by reason of his very heavy bone and drafty proportions. A smaller black named Earl secured fourth post for Redman. He is full of quality and handles his shapely underpinning masterfully. He beat a tall black of excellent quality but less bone. In the stallion foal class Laverty showed two growthy and promising youngsters with Iowa State College sandwiching a well set-up Jalap foal in between.

The yeld mare class brought out Singmaster's excellent six-year-old gray Masse, not a ton mare but one of those sweet drafty matrons that breeders like. She stands on very heavy and fashionable timber and her deep chest stamps her as a mare of strong constitution. A tastefully turned back and croup distinguish Quirin's second-prize gray Clara, and she has very long pasterns and generally excellent joints. She showed thin but still was very attractive. Bulechek & Waters had their big black Identa in the next class with her stretchy two-months-old foal and they stood right at the top. The mare is of splendid matronly type and her produce measures up to expectations. The foal won in the filly foal class. Lee Bros. got the red ribbon on a productive stamp of mare named Roseland and the black Ellen from Iowa State College won third. Her legs and general pattern are also attractive. Singmaster put a pair of beautiful blacks in the front of the three-year-old class. The winner Keota Lillie is a sweet feminine filly, very drafty built upon long-lived legs. She is taller and more clean-cut than her mate, Keota Callie, which is of a rather blocky pattern. Lagos did himself proud as a sire in the class for two-year-old fillies, where his gray Lagoceo was an outstanding winner. She is compactly knit together, has ample foundation for a long life of hard work and has a rare strength of front and hind leg. She was the grand champion later on. She has larger bone and more elastic pasterns than the amply topped black mate Keota Kiuross by another sire.

The unlucky thirteen yearling futurity fillies made a luckily admirable class from first even down to some much admired ones which were still outside the money. Even in so strong a crowd the conspicuous winner was Hoit's black Patricia, which he bought last winter after she won second place in the foal class at the International show. She is developing into a great brood mare pattern. She has grown a large shapely frame, long neck, back and croup of rare strength and symmetry, and legs and feet just like they were made to order. As would be expected, she moves well. An outstanding gray sired by Lagos won second for Singmaster. Her joints and shanks are of the hardest kind but she is not so well proportioned in hindquarters as the third filly, the black Edith Kesako shown by Champlin. All of these are more rugged and drafty than the elegant gray Lagos filly Smith Creek Lagosessa that stood fourth. She has a sweeter face than Hoit's gray Lagitime that followed. The filly foals had plenty of stretch and strong underpinning. The winner is the big but young black that showed with the winning mare for Bulechek & Waters.

THE BELGIANS.

The number of Belgians which appeared in the ring was very small. Classes of less than half a dozen were the rule, but these contained some of the best Belgians in Iowa and gave the breed a favorable presentation to the show-going public.

Several stables of the breed had quarters on the grounds without bringing their entries into the ring or participating in the night horse show parade. Their excuse for not showing was dissatisfaction with John L. De Lancey as judge. At the beginning of the show they filed a protest against Mr. De Lancey's selection as judge, but made no deposit and gave no reason for his removal as the rules require in case of protest. Of course such a demand was not considered by the fair board. Neither Mr. De Lancey's intelligence nor integrity as a judge had ever before been called in question. The board very leniently allowed these men to keep their horses on the grounds instead of compelling their removal.

Those who had made entries of Belgians are: C. A. Ackerman, Perry; J. J. Bonnstetter, Corwith; H. V. Caldwell, Kanawha; Crownover & Brandhurst, Hudson; Champlin Bros., Clinton; W. E. Estes, Packwood; C. G. Good, Ogden; P. W. Heil, Garrison; Chas. Irvine, Ankeny; Iowa State College, Ames; H. Lefebure & Sons, Fairfax; J. A. Loughridge, Delta; J. C. Richie, Stratford; I. W. Van Nice, Garrison; Fred L. Dunbar, Grimes, and Casey Bros., Iowa City.

Those who brought their Belgians in for competition are: Champlin Bros., Clinton; W. C. Estes, Packwood; Iowa State College, Ames; H. Lefebure & Sons, Fairfax, and J. C. Ritchie, Stratford.

A splendid display of Belgians was brought out by the Lefebures in class after class. Their quarters in the horse barn were thronged with inquirers after their appearance in the class of aged stallions with two famous horses, a roan and a chestnut. Their roan Reavedore is the same colt which won the reserve championship last fall at the International show, at which time the Lefebures bought him at a long price. He is large, muscular, clean-cut and powerfully put together, but this time he moved scarcely so well as usual. The ten-year-old chestnut Mon Gros was champion at the International show a few years ago. After about a dozen years of stud duty he still displays beautiful quality and freshness and he moves with his youthful habit of boldness. In three-year-olds the Lefebure lot furnished the winner, a bay called Aiser, the largest colt of the class. He has a very deep chest, the quality of steel and a dashing display at the halter. He won the grand championship. His mates were beaten by Champlin's roan King De Roosbeke, whose strong back and extra long level croup combine with durable underpinning, well handled, to make him an admirable colt. He is thin but showed well nevertheless. A flat roan named Duke of Elmwood came third for Lefebures by reason of a thick middle piece and ends, and hard shapely timber although a trifle fine in bone. Next stood Lefebure's chestnut Eddy, a beautiful type but not standing in quite the best way. Three splendid two-year-olds constituted the next class and the honors were captured by Lefebure's roan Fairfax Major, a colt of correct modern type all over even to the hard texture and well proportioned joints and feet. Estes showed the very muscular heavy-boned black Black Bruno in second place, ahead of Lefebure's substantially made chestnut Fairfax Jean. The one yearling stallion was brought out in the futurity class and this was a good chestnut sired by Impress and exhibited by Ritchie. No stallion foals were shown.

The Lefebures proved their strength in mares by winning first on the seven-year-old Rita, a mare of commendable sweetness and durable makeup, second on the four-year-old Radius 4th, which is another of matronly promise, and fourth on the four-year-old Homerine. Estes found third place with his good six-year-old Bay Beauty. No mares with foals were shown. Lefebure brought in an attractive three-year-old named Nanette 2d, which might well have won her blue ribbon even against an array of others. Champlin's two-year-old Eliza de Roosbeke secured the blue tie in the next class, and a right sweet shapely filly she is.

With one exception the yearling futurity fillies were a disappointing lot. Small bone and feet either narrow or small were all too prevalent. However the winner needs no apologies. She would command admiration in any company and is one of the best futurity winners ever shown at Des Moines. This is the chestnut Fairfax Rudge, sired by Jean Bart and owned by the Lefebures. Her outlines from every angle fill the eye and conform closely to the Belgian ideal. Her strong back, long level croup, muscular stifles, hard joints, long pasterns and full round feet furnish the right background for her sweet feminine front. Estes' bay Bright Beauty is blocky and wide but travels true. Champlin's third-prize roan Rosette is one of the largest but is much more shapely of top than of bottom. Her bay mate in next place does not need large enough shoes to make her look the best. Iowa State College scored a victory with its filly foal College Dream which beat Lefebure's entry Fancy. These are both creditable youngsters.

THE CLYDESDALES.

The collection of Clydesdales was on much the same order both in extent and merit as in recent years. They numbered thirty-two animals. Much improvement has been registered during the last few years and there is an absence of light middled animals. There was a high average of excellence maintained throughout the classes of the breed. The noted horses Prince Cedric and Samuda each sired a number of the best animals. Positions were assigned by Andrew McFarland, Polo, Iowa, in his usual painstaking and skillful manner. His lineups of winners carried practical lessons in Clydesdale standards for those who studied them closely.

The aged class of stallions included five horses, all good ones. Hillman was successful with the bay Royal Knot, an active, impressive fellow, thickly made and possessing long pasterns and a silky quality of hair and smoothness of joints. A strong sloping shoulder and a back well upheld distinguish the big-boned bay Prince Urbin shown in second place by Ford. This horse was followed by two others from the same stable. The same exhibitor brought out the only three-year-old shown. Two-year-olds, eight in number, had an outstanding winner in Merna's extraordinary Proud Archer, an International winner last year. He is a rich dark bay having beautiful Clydesdale character, long neck, powerful back and the kind of legs, feet and feather that Scotchmen dream about. He became the grand champion. Ford's brown Druid that won the red ribbon has less bone and his breed type is less striking. Another Ford entry, rather thin but meritorious stood third in the final line-up.

Yearling futurity candidates numbered only four from as many stables. A fine balancing of little differences evidently determined the choice between the first two. Tice's bay Sultan's Choice is of approved type with long neck and joints and pasterns that command admiration both standing and going. Even longer and more elastic front pasterns are possessed by the second bay, Merna's King Diamond by the famous old show horse and sire Samuda, but his hind feet need spreading at the heels. The smallest of the lot is Ford's bay Marksman by Prince Cedric. He was thin but his shapeliness, bone, feet and feather brought him third in preference to Hillman's bay Wayside Douglas. Merna showed a commendable stallion foal.

Mare classes were poorly filled. Merna and Ford competed with yeld mares, the former winning on Samuda's bay five-year-old daughter Samuda's Violet, which is a typical Clydesdale from her sweet front to her serviceable bottoms. Her feather is like silk. Merna's faithful broodmare Molly, bay with white hairs, won the mare and foal class with her first prize stallion foal. Her well known thick-made, easy-keeping pattern, medium scale and very shapely shanks and joints seem to wear her well year by year. Hillman had the winning three-year-old filly in a class of three. She is meritorious in every way, as she had to be to beat Ford's sweet, strong backed, good going daughter of Prince Cedric. The winner is sired by King of All. A daughter of Samuda came third. Tice won with his two-year-old Bonita by Langwater Sultan, a sweet shapely filly that moves well. Hillman's attractive Jessica slipped in between the winner and her mate Bethene.

Futurity fillies to the number of five gave the judge a good workout. He chose the growthy Ford bay Cedric's Baroness by Prince Cedric for although she is thin she beats them all in stretch of frame, size of bone and feet, and attractive front, and her legs and action win approval. Of a smaller type is the fatter bay Dolly's Maid by Samuda which won second prize for Merna; however she is muscular, active and possesses legs of the stereotyped shape and finess of feather. She has more bone, a longer croup and straighter hind leg than Tice's boy Sultan Queen which stood next. Ford won first on a neat filly foal shown alone.

THE SHIRES.

Several Iowa breeders brought out very creditable Shires and the display was further strengthened by the presence of a large stable from the Truman's Pioneer Stock Farm in Illinois. There were all told twenty-eight head of Shires. An outstanding feature of the show was the complete absence of "wooden" legs and the universal presence of soft fine silky feather, denoting excellent wearing quality in legs, joints and feet. Prof. W. H. Pew, Ravenna, O., did artistic work as judge in the rather small classes which were run through rapidly.

In the first class Trumans' were declared the winners on the brown aged stallion Kirtling Bold Lion which is one of the big ones and possessed of a powerful frame. He was awarded the grand championship. Huddlestun's bay Seven Flag preserves his fine quality well and looks very substantial all over. Two such high-class stallions deserved some strong competitors. Tom Skola showed a very prepossessing bay named Starlight King which readily headed the three-year-old class. Besides a commanding front and a wealth of Shire character, he has a strong middle piece, muscular ends and legs of distinctly hard tempering. A somewhat taller bay with big bone and clean joints is Trumans' record-prize colt Captain Osgood. His legs look harder than those of the strong-backed, level-crouped muscular black Wrydeland's Drayman also shown by Trumans' and winning third place in preference to the smaller and less powerfully proportioned brown Winterset Boy shown by Foster. Trumans' scored in the next class with the two-year-old Eureka Standard. This colt is distinguished by considerable white on legs and face. He is a level-topped fellow and his underpinning is the work of a master. Another Truman colt, Witcham Minstrel 2d, came next. He has typical Shire bone and substance, and withal displays a hard texture of legs. He is not only larger but also of finer quality in underpinning than the Smith colt Wilfred standing third.

Only two futurity yearling stallions came forward. Truman had the winner in Williams Dan Patch, a big burly bay with legs, bone, quality and action to please the most critical judge. In back, croup and cordiness of cannon this colt beats Smith's brown Ace of Hearts.

There were two yeld mares shown and Trumans' very big matronly chestnut Royal Tulip beat Huddlestun's good Edgewood Dinah and also won the grand championship. Huddlestun was the victor in the class for brood mare and foal with a strong-boned, hard-jointed mare and her good stallion foal, the latter sired by Bury Cannon Ball. Smith had a commendable rival for the honor. In three-year-old fillies Trumans had one of their strong entries, big of bone and well made, which beat the two Huddlestun fillies. Trumans also won first on a typical sort of two-year-old.

Four futurity yearling fillies came out for a rating, three of them sired by Osco Grand Prince and owned by Smith Bros. One of these is the thin light bay Gene, whose great bone of steel-like texture and her correct legs gave her a somewhat more drafty appearance than the better-fitted, very deep chested brown Hawthorne Rose entered by Trumans. This one is exceedingly sweet and shapely but a little lowset. She beat the other two Smith entries.

JACK STOCK AND MULES.

Forty big clean-cut mules were shown by Wyatt Carr & Son, Collins, Ia.; F. L. Hutson, State Center, Ia., and a few smaller exhibitors. A number of individuals weighed 1,700 to 1,800 pounds and made an impressive appearance, as their underpinning, quality and style were also of a high order. A few excellent jacks drew attention. One of the strongest-backed best-legged big jacks seen this season is the three-year-old McHannibal with which Carroll McKibben won the championship.

LIGHT HORSES AND PONIES.

The light-horse barns contained about eighty animals which competed in daily classes in front of the racetrack grandstand and in harness and saddle events at the coliseum at night horse shows. Some of the best American saddle horses in the country were present and the saddle classes were well filled and staged lively contests. Standardbreds were less numerous and only a few Hackneys appeared.

The pony section was stronger. Shetlands were numerous in nearly all their events, as might be expected from the fact that the barns held ninety-four of these children's pets. Mrs. Adam Stirling and D. G. Welty brought out some entries that were very highly praised by Prof. W. J. Kennedy, Sioux City, Ia., who judged the ponies. A few Hackney ponies were shown, principally in harness events.

PART V

State Dairy Commissioner's Report for Year 1918

W. B. BARNEY, Commissioner

The past year has been the most eventful year in the history of the department. While our resources have frequently been taxed to meet the many emergencies which arose, we believe that we have met them in a creditable manner. The scope of the work covered during the year is too large to permit me to go into detail, and I shall, therefore, confine myself to a condensed report on the year's work of the department. Full details as to our activities are to be found in the records of this office.

Conditions brought about on account of the war have materially increased our work and the activities of this department. The high prices of all food products have been an incentive for the unscrupulous dealer to misrepresent or substitute in many instances the spurious for the pure products. The percentage of men who would like to get by with 15 ounces for a pound may have increased to some degree, but take it as a whole over the entire state conditions are and have been fairly satisfactory.

There has been a decrease in the production of dairy products, particularly butter. There appears to be good reasons for the decrease. The beef value of the dairy cow as compared with the milking value has increased about 50% within the last year. There had been a very considerable increase before this. This undoubtedly induced many farmer dairymen to part with a number of good cows that would have been kept under ordinary conditions.

A scarcity of help on the farm and in the creamery has had a great influence on the output of butter. The farmer's sons or his hired man going into the service in many instances obliged him to dispose of his cows so that he could give such time as he had to the care of his crops. Northern Iowa where most of our creameries are located has been especially favored by having an exemption board that was most considerate of the needs of our people and the nation. Had this not been true, many more of our creameries would have been closed for want of help.

Another factor that has had a bearing on the decrease in dairy products is the high price at which all farm products have been selling. The tendency has naturally been to sell rather than to feed these crops.

The high prices paid for grains, live-stock and hogs has stimulated our farmers to greater production along these lines. Markets for these products, as well as the prices at which they will sell, has been practically guaranteed by the government. The dairy industry did not receive the encouragement, but a stabilization of the dairy industry with a fixed price for dairy products is anticipated. I believe that when this is done that we will be able to make greater headway in our dairy extension work.

The appeal to our farmers for larger crops of agricultural products has been nobly responded to. Under the conditions existing this year with our shortage of farm labor the demand could be met only by producing such farm products as required a minimum amount of labor. Our Iowa farmers practice diversified farming and it has not been possible under existing conditions to give the dairy herds the care and attention necessary for the largest yields of milk. This, we believe, is an other reason that the production of dairy products has not increased during the past year.

During the shortage of farm labor we have not gone into new territory to stimulate dairy production but have concentrated our efforts in the well defined dairy centers to promote greater production there.

The difficulty in securing competent herdsmen has had its effect on the displays of dairy cattle at our fairs and dairy shows. This year's record, however, for prize dairy cattle is one of which Iowa may well be proud.

Our cheese factories have had a splendid market for their output. The market price of cheese has not been so steady as we would like to see it but none of our cheese factories has experienced any difficulty in finding a satisfactory market. Under the leadership of D. J. Murphy of Waukon, the cheese industry of northeastern Iowa is becoming a fixed asset of the state, Allamakee county is becoming agriculturally as well as topographically the Switzerland of Iowa.

The department has been more or less crippled on account of some of its members going into service, but the big advance in wages offered by commercial concerns has made it almost impossible to get or keep competent help of any kind at salaries the law permits the department to pay.

This is especially true with reference to men in the dairy department, several of whom have received increases ranging from $300.00 to $600.00 per annum. They felt that they were obliged to take advantage of these offers, as they found it impossible to support their families on the pay received from the state, the cost of living having increased more than 50% in the last few years.

During the year ending July 1, 1918, the creameries of Iowa made 83,349,309 lbs. of butter. This is 10,920,376 lbs. less than the make of last year and 12,386.393 lbs. less than the average make for the preceding ten years.

Our ice cream factories at our creameries made 5,513,997 gallons of ice cream, an increase of 1,286,600 gallons and our condensed milk factories consumed 21,015,692 pounds of milk.

Iowa's cheese factories have made good progress. They made 755,921 lbs. of cheese as compared with 596,639 lbs. produced last year.

Early this summer an agency for securing butter for the navy was established in New York City. The function of this depot is to act as a collection point and clearing house for the butter packed by the numerous creameries supplying it.

Butter for the navy or Navy Butter, as it is popularly called, is a grade of butter different from that previously made by our creameries. It is made from sweet cream only, and under conditions which will insure its keeping qualities when stored. The regulations under which the navy butter must be made are rather exacting and under normal conditions creameries prefer to make their regular grade of butter rather than meet the conditions of the .regulations.

Realizing the importance of supplying the boys of our navy with a proper diet this depatment in co-operation with representatives of the Dairy Division of the U. S. Department of Agriculture and the Dairy Department of the Iowa State College, held meetings, with such creamery boards as we could interest, with the result that over forty creameries are now making butter for the navy on contract. They have already delivered over 3,000,000 lbs. to the navy.

All of these creameries are located in the north one-third of the state and in the most highly developed dairy centers where daily inspection, one of the requisites of the navy regulations, is possible. We have many additional creameries equipped to make this grade of butter but most of them are isolated and the manufacture of navy butter in them is not practicable.

We have not endeavored to increase our output of Iowa Trade-Mark butter this year as we considered it our patriotic duty to center our efforts on high quality butter for the navy. We are not marking time however, as the results of our work with the creameries making navy butter, and their patrons will be permanent and these creameries will be in a position to make Iowa Trade-Mark butter as soon as their contracts with the navy end.

MARKET MILK

There has been no material change in our system of inspection of market milk. The work has proceeded according to the methods in use by this department during the past few years. Our local milk inspectors have handled the work in their respective towns under the direction of Dr. O. P. Thompson, State Dairy Inspector. From time to time samples have been sent from the various cities to our laboratory for bacteriological analysis. A complete survey of the Des Moines milk supply and the supply of Camp Dodge was made early in the summer. The market milk situation shows gradual improvement.

FOOD AND SANITARY INSPECTION

The examination of staple articles of food has commanded more of the time of our food inspectors than in previous years. The conservation movement turned the attention of our people from luxuries to the more essential food-stuffs. The grading, salvaging and disposition of perishable foods reaching our market centers in poor condition was a very important work performed by our food men.

A comprehensive system of bakery inspection to determine the extent of stocks on hand and the proper use of substitutes in baking was instituted as a result of a conference held with representatives of the Federal Food Administration. This work our men did in connection with their regular sanitary inspections of bakeries.

Previous to the egg storing season plans were laid for the purpose of insuring the maximum quantity of Iowa's egg crop reaching the market in prime condition. ''Don't lose an egg'' was the watch word. Rules and regulations based on our previous experiences in handling the egg situation, were formulated and these were made obligatory by a ruling of the Federal Food Administration under which all buyers of eggs were licensed. The regulations together with the compulsory license system instituted by the food administration gave us almost perfect control over the egg situation.

The system worked out so satisfactorily that I would recommend the enactment of a state law licensing all buyers of eggs and making the regulations, enforced by this department during the past year, compulsory at all times. Such a law would have the effect of securing a more uniform market for Iowa eggs and insure the farmer a fairer price for the eggs he takes to market.

The serious sugar shortage has handicapped many of our food manufacturing establishments and our inspectors have been busy in encouraging the proper use of wholesome sugar substitutes. The necessity of making a little sugar go a long ways has been responsible for the appearance of many syrups not complying with the law. There has been more sorghum molasses made in Iowa this year than ever before in our history. Most of it is of excellent quality but it has been necessary to do considerable work to see that it complied with the standard which requires that sorghum contain not more than 30% water.

We believe that we have been able to maintain the high reputation which this state holds as regards the sanitary condition of our food manufactories and retail establishments. Our established factories have made steady growth and there has been a marked increase in the number of establishments manufacturing and preparing food-stuffs and food-commodities for the market and consumer. New establishments always require considerable attention, until they understand the application of the laws, rules and regulations effecting them. The local slaughtering of beef and hogs has increased and this department has in every way encouraged the movement where we thought conditions would justify. We have realized for a long time that there are too many trains of Iowa live stock going to Chicago and other packing centers meeting trains coming back with dressed beef, pork, bacon and hams.

The entire poultry and egg industry of Iowa has been very active and high prices prevailed. Poultry dressing establishments have been frequently inspected to insure their sanitary condition. The preparation of liquid or frozen eggs for baker's and confectioner's use is an industry which has made slow but steady growth during the past few years. The high price which buyers paid our farmers for eggs was an incentive to conserve all edible eggs and a heavy pack of frozen eggs has resulted. To insure the wholesomeness of frozen eggs frequent inspection and supervision of the raw material and methods of preparation, as well as storage, is necessary.

The chief egg breaking and freezing industries of the country are located in the central west and Iowa is fast taking the lead in the industry. With but few exceptions the character of the product of our egg breaking establishments has been satisfactory. In order to better control their egg breaking establishments, the state of Illinois licenses them. A license is obtainable only after an inspection shows that the factory is properly equipped to produce a wholesome product and licenses may be revoked at any time a chemical and bacteriological examination of the product shows it to have been improperly prepared. A similar provision of our Sanitary Law may be desirable.

WEIGHTS AND MEASURES

The special and routine work of the Weights and Measures Department continues to constitute a large portion of our work. I have found it necessary to assign the entire time of three men to the duties of heavy scale inspection and to use such time of our food inspectors, as they could spare, for the inspection of counter scales in retail establishments. During the present emergency with its prevailing high prices for all commodities the necessity of accurate scales and weights is apparent. The demands from grain and stock buyers, and farmers for emergency and periodical inspections of their scales has been exceedingly heavy. The elevator and stockyard patrons insist on frequent inspections to insure fair dealing, and have learned to have confidence in the accuracy of the scales approved by this department. The systematical way in which we can handle the routine inspection of farm and elevator scales renders it possible for us to do this work at a low cost per scale. Although the revenue received by the state in the form of scale inspection fees amounted to $7,345.61 last year, the average charge for wagon scale was about $3.00. Similar inspections made by representatives of the scale houses cost at the rate of $10.00 per day plus the expenses of the representative from and to his headquarters. Our records show that 5,697 platform scales, 9,953 counter scales and 3,121 creamery test scales were inspected by this department last year. These items do not include the number of weights submitted by cities, firms, and individuals for verification as to their accuracy.

SEED CORN

The spring of 1918 found Iowa, as well as most of the other important corn states of the middle west, in a precarious position for seed corn. Usually about one-half of our force is employed during the major portion of the three months previous to the planting season, in the inspection and examination of agricultural seeds. This year as a result of a conference which the Governor held with the State Council of Defense and this department it was decided to place our entire inspection force at work on the seed corn problem in an endeavor to see that all available supplies of seed corn were distributed where they were most needed and at a reasonable price. Each of our inspectors was given a territory to cover. This they did in co-operation with the county agents working under the direction of J. C. Coverdale of the Agricultural Extension Department of Ames. Thousands of bushels of crib corn were examined to determine its fitness for seed and measures taken to see that it reached the hands of the needy planter at a reasonable price. During the critical stages of the season complaints relative to profiteering and deliveries of corn not meeting the requirements of the Seed Law literally flowed into this office. Fifteen to twenty dollars a bushel was frequently asked for seed corn worth five dollars a bushel. Our existing laws did not meet this emergency but as soon as the condition was explained to Governor Harding he met the situation by issuing a proclamation which practically set the maximum price for seed corn at $10.00 a bushel. This had the effect of releasing thousands of bushels of corn at a price which the farmer, so unfortunate as to be without seed, could afford to pay.

Prosecutions were often necessary to curb willful violations of the law and selling seed under false representations as to its viability and origin. Through the efforts of this office several thousand dollars in the form of rebates were returned to farmers resulting from overcharges and unfair contracts. Evidence that the work of this department, as well as that of the co-operating agencies was effective, is to be seen in the wonderful stand of uniform corn now being harvested. Starting with the poorest seed in the history of the state, Iowa this year has the finest crop of corn which I have seen since I have been commissioner.

FEEDING STUFFS

A general survey of the quality of Commercial Feeds and Medicinal Stock Foods was made during the winter season. The object of this inquiry was to determine the nature of the feeds being offered for sale on the Iowa market and to see whether or not the manufacturers and dealers were complying with the requirements of the Feeding-Stuffs Law relative to registration and proper labeling as to composition and quality. The results of this survey as well as the detailed findings of our chemists are to be found in the bulletin on this subject now in the hands of the state printer. The fees paid to the State Treasurer under the Feeding Stuffs Law amounted to $26,732.08, of which $23,157.08 was obtained from the sale of tax tags and $3,575.00 paid for licenses by manufacturers of medicinal stock foods.

Our stock and hog raisers continue to be exploited by the manufacturers of inferior and frequently worthless medicinal stock foods. This situation can not be effectively curbed under our existing law and this should be changed so as to render adequate protection to the purchaser possible.

HOW THE FOOD ADMINISTRATION REGARDS PURE BRED DAIRY CATTLE

By Everett W. Smith, Education Division U. S. Food Administration.

The Food Administration, as you know, is very much interested in the subject of pure bred dairy cattle and in leaflets sent out for general circulation has gone on record, emphasizing the great value of milk as a food, especially in the diet of children where it is indispensable and is using every possible effort to maintain dairy herds.

The Food Administration of course recognizes in this connection the outstanding value of pure bred cattle. In certain countries, there have been developed as a result of processes of selection of many centuries, certain great breeds of pure bred cattle. We may reasonably expect to find within these breeds the most efficient producers of dairy products. Cattle of these breeds have been imported to this country and from the standpoint of production, have been highly developed here. We believe that the work done by the Breed and Record Associations, in promoting the development of these breeds of cattle in this country, has resulted in great good to the industry and to our people as a whole.

FOOD VALUE OF MILK

"Why are dairy products so important foods?" "Why are they essential to health and growth?" "Why are they economical foods?" These are typical and logical questions asked by those who want to know the truth about food economy or those who would feed themselves or their family well and economically. To answer these questions intelligently we must understand of what a proper diet must consist, that is what must be contained in the food which we eat to supply the body with the various kinds of materials required to support growth, supply energy and keep the body vigorous.

Years of study and experimenting show that five different kinds of food materials or food constituents are essential in an adequate ration. These are energy producing materials, (the fats and carbohydrates) satisfactory proteins, suitable mineral matters, and two substances, the exact nature of which is unknown, called vitamines. All these food materials are necessary and one kind can not be substituted for another as each has a definite function to perform. An adequate quantity of each of these materials must be present in the ration in order that it be satisfactory.

All food stuffs contain more or less of one or more of the essential food constituents but milk is one of the very few foods which contain all of them in suitable proportions. In the case of many of our foods one or more of the essential food constituents are of so poor quality or are present in so small quantity that they are not found satisfactory for meeting the needs of the body of the growing child. Milk, however, does contain the proper kinds in suitable proportions and that is why milk promotes rapid growth and one of the reasons why it is a superior and important food.

Formerly nutrition experts considered that to formulate a satisfactory diet, it was necessary to consider only the amounts of digestible energy producing materials and digestible protein material which the foods entering the ration contain. Little thought was given to other constituents as in the ordinary mixed diet there is usually sufficient mineral matter, the only other diet essential then thought necessary. The error of formulating diet on this basis is now apparent. A satisfactory diet can not be composed of fats, carbohydrates, proteins and mineral matters alone. Energy producing materials are important and foods containing them should constitute the major portion of the diet of adults. Our cheapest foods, such as wheat, corn, oats, rice, etc., are rich in the energy producing material needed by adults and can well constitute from 50 to 60% of the adult's diet. These foods do not contain all the elements essential to proper nutrition and are in fact usually very poor in the materials needed to promote growth. This important fact must be kept in mind by those who would feed their families at the lowest cost. The use of cereal foods without an adequate supply of the other essential food materials is one of the faults of the diets of many of our poorer people and invariably leads to one of the many faulty diet diseases. It is true that many of our cereal foods contain considerable protein but the protein furnished by cereals alone is a poor kind.

The proteins of the various food-stuffs are not all of the same value in supplying the body with this important material. Proteins of seeds alone are not satisfactory. On the other hand, protein from milk, cheese, cottage cheese and other dairy products, as well as that of eggs, meets the body requirements perfectly. When used with cereals milk seems to render the proteins of cereals satisfactory and more available to the growing body. The cereals can not supply the required vitamines.

Little was known until recently of the important role which vitamines play in promoting growth, keeping our bodies vigorous and disease resisting. It has been known for a long time that a diet composed of purified fats, carbohydrates, proteins and the necessary mineral matter would not support growth and that reproduction is impossible on such a diet. Dr. McCollum of John Hopkins University and others have shown during the past few years that the reason these purified materials cannot support growth is that such a mixture does not contain the essential food materials, vitamines. The exact nature of vitamines is not known but those required by the growing animal appear to be of two kinds, one kind of which is soluble in water and the other fat soluble. Both the water soluble and fat soluble vitamines are found abundantly in milk. The water soluble vitamines are found abundantly in milk. The water soluble vitamine are present in adequate quantities in seeds such as the grains used for food and in many other common foods. The fat soluble vitamines are by no means so plentiful but they are found in abundance in milk, butter, cheese, eggs and the leafy portions of vegetables. They are not found in the vegetable fats and oils or in the animal fats with the exception of the fats of the glandular organs (liver fat and fat of kidneys). The specific action of vitamines in the diet of growing animals is apparent in the following conclusions reached as a result of some of the investigations of McCollum, Hart and others, at the University of Wisconsin:

"If we take such a mixture of food stuffs which do not allow an animal to grow and stir into it a small quantity of egg yolk, say for a pound of the ration an ounce of egg yolk, growth can be induced. The same result would be obtained if we had put in an ounce of evaporated milk instead of the egg yolk. Suppose next that we take all the fat out of this satisfactory ration by extracting it with something that dissolves fats. It will be found that though the ration will be able to maintain young rats without any increase in weight for about a month, it will no longer be able to induce growth. Only on restoring the extracted fats to the ration will growth be made. A similar result could have been obtained by adding butterfat or fats obtained from certain animal organs; but other fats such as lard, almond oil and cottonseed oil would not have brought about the same result.

"These facts might well cause us to stop and think. Because of the fact that some fats naturally contain substances necessary for growth while other fats do not contain such substances, there has arisen the necessity of speaking of the presence or absence of a fat soluble vitamine. This vitamine is closely, though not exclusively, associated with fats. It is also found in seeds to a certain extent, and the leafy portion of plants to a considerable extent also contains this substance. Milk, eggs, and alfalfa leaves are a very good source of this unknown constituent, although there is every reason to suppose that forage plants in general are a better source of this class of vitamines than the grains.

"The fact that the fat soluble vitamine of milk is concentrated in the fat of this product might lead to the inference that skim milk would be inadequately provided with this substance. It is evident, however, that a portion of the vitamine contained in the milk fats dissolves in the whey of milk and consequently is present even in skimmilk, although perhaps not as abundantly as we should wish.

"Of late there has appeared in the advertising literaure of manufacturers of milk-product substitutes the statement that the vitamines of milk are destroyed by pasteurization. This statement is absolutely false. In our experiments in the study of the vitamines, butterfat is heated higher than is required for pasteurization and for much longer periods of time without destroying this substance.

"Further, there is in these times of food scarcity a tendency to use plant oils as substitutes for butterfat, even claiming for them a value equal to that of butterfat. No plant oils so far investigated, and those include cottonseed oil, almond oil, peanut oil, cocoanut oil, and sunflower seed oil, contain the fat soluble vitamine in appreciable quantities. It is false to claim these as substitutes for butterfat. We do not condemn them, for they are valuable food products as sources of energy and their use for that purpose should be encouraged; but they should sail under their own banner and be used in nutrition for exactly what they are worth. To remove the butterfat from whole milk and replace it with cocoanut oil and then claim that the product is equal to whole milk for the nutrition of growing children is not true.

"In the dairymen's competition with butter substitutes a word should be said concerning oleomargarine. This product is made from both plant and animal oils and the higher grades are churned with milk or butter or both. The plant oils used contribute no fat soluble vitamine; the neutral oil, or that pressed from lard, contains no fat soluble vitamine. The oleo oil, or that prepared from beef fats, does contain some of this type of vitamines and of course the milk products contribute another portion. The result is that the finished oleomargarne contains some of this vitamine, but it is necessarily not in the same concentration as found in the natural butter. Their dilution, as compared with butterfat, is in proportion to the plant oils and neutral oil used, with a further dilution by the use of oleo oil which contains this substance in less concentration than does butter. Consequently, even the higher grades of oleomargarine will have their fat soluble vitamine content diluted, the degree of dilution depending upon the method of manufacture. **Five per cent of butterfat in a ration of purified food materials contributes enough fat soluble vitamine for normal growth, but 5 per cent of the oleomargarine we have tested will not accomplish this.** These are the facts as they are known today, and they should make it clear that no product can claim the distinction of substitute unless it shows equal nutritive value in quantitative relations. These facts do not condemn oleomargarine any more than they condemn plant oils, but merely disclose what each contributes to nutrition."

In addressing the National Dairy Show this year Dr. McCollum laid particular stress on the function of "Fat Soluble A" and the necessity of maintaining an adequate supply in the diet of adults. He said:

"Orientals and peoples of the tropics who use no milk are inferior to Europeans and Americans both physically and in respect to their mental development.

"It is impossible to make up a satisfactory diet out of such things as cereal grains together with tubers as potatoes, beets, and meats. You can have all those in a diet in the right proportion, therefore, have any chemical composition you want, but they fail to promote satisfactory nutrition either to man or animal. The reason for this is three-fold, there is a poor mineral content, the proteins are of a poor quality, and the unknown substance called Fat Soluble A is lacking and the animals suffer. There are only two methods by which a satisfactory diet can be made up; one is by the use of the above together with a liberal amount of either milk or eggs, or the leafy vegetables such as spinach, cabbage, turnip leaves or other vegetables suitable for use as greens. In all groups of industrially employed peoples, there is a tendency to purchase for their food supply such foods as rice, rolled oats, potatoes, sweet potatoes, and meats. All peoples who are living on this type of diet tend to suffer from tuberculosis because their vitality is lowered by long continued use of a faulty diet and this pre-disposes them to tuberculosis.

"There is a large group of people throughout the south who grow a cash crop such as cotton rather than engaging in diversified agriculture who use the same type of diet and thereby have their resistance lowered so that they become infected with pellagra, which has increased to an alarming extent in recent years.

"Dr. K. Goldberg, of the Public Health Service in Washington, has made a very careful and extensive study of the diet of pellagra. He finds that those who use a liberal amount of milk and some eggs do not suffer from pellagra.

"The greatest factor in the cure of tuberculosis, once it is contracted is through proper hygienic treatment together with liberal feeding on a diet in which milk and eggs find a very conspicuous place.

"There has been a great reduction in the use of dairy products in the United States during the last year, and this is a serious matter from the standpoint of public health. The use of milk has made us what we are. The keeping of dairy animals is the greatest single discovery in the history of human progress. The cost of production has so increased that the price must go up that the business may be profitable.

"Every public spirited person should at this time make it his business to educate his acquaintances in the matter of using more of all kinds of dairy products in order to encourage an industry which is in great jeopardy."

From the foregoing facts it is evident that the superiority of milk and the other dairy products and the important position which they command as foods is due to their ability to supply proteins which can be readily and completely used and to supply sufficient vitamines to the diet to promote growth. Very few other foods can do this and all of the other foods which can accomplish the same result cost from two to three times as much as milk. Eggs, for instance, must sell for a price per dozen equal to the price of a pint of milk before they can do the same work at the same cost. Leafy vegetables are important as a component of the diet for their valuable mineral content but they cannot furnish enough fat soluble vitamines.

Dairy products such as milk, cheese and cottage cheese alone are our cheapest sources of an adequate supply of this essential and the cheapest source of desirable proteins.

In a book recently published, "Every Day Foods in War Time," by Mary Swartz Rose, this is found:

"When the milk pitcher is allowed to work its magic for the human race, we shall have citizens of better physique than the records of our recruiting stations show today. Even when the family table is deprived of its familiar wheat bread and meat, we may be strong if we invoke the aid of this friendly magician."

BUTTER OR OLEOMARGARINE

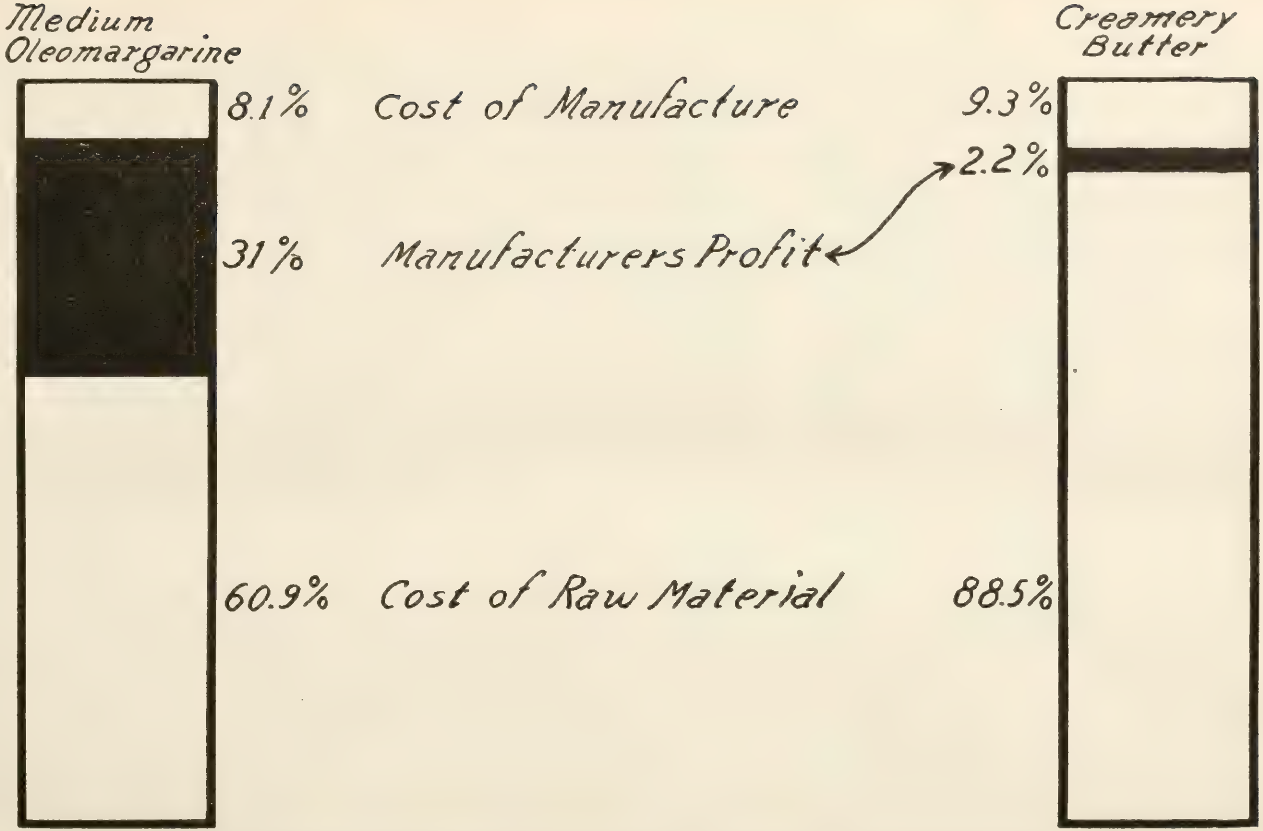
Aside from their vastly different nutritive values, butter and oleomargarine have to Iowans an economic significance not generally appreciated.

During the last ten years Iowa has produced an average of 95,735,702 lbs. of creamery butter of which about 15% was consumed in the state and 85% shipped to eastern markets. These figures are exclusive of the farm dairy butter almost all of which is consumed locally.

Butter is an Iowa product. The raw material, butterfat, is a continuous cash ''crop'' from nearly every Iowa farm. Butter is made by Iowa labor, in Iowa factories which are made of Iowa building-materials and equipped with Iowa owned and Iowa made machinery operated by Iowa coal. Most of the manufacturer's profit remains in Iowa where it is spent with Iowa merchants.

Last year there was made in Iowa 83,349,309 lbs. of creamery butter which the creameries sold for $38,806,989. What became of this money may be seen from the accompanying cut. Eighty-eight and one-half per cent or $34,344,185 was paid to Iowa farmers for the cream and milk containing the butter-fat; 9.3% or $3,609,049 was spent by the creameries for Iowa labor and power, and most of the remaining $853,755 was distributed among Iowa farmers in the form of dividends from their creameries.

Oleomargarine is not an Iowa product nor does Iowa business derive any benefit from its manufacture. Some hog and beef fat is used as a raw material but by far the larger part of the raw material is either cottonseed oil, from the southern states or cocoanut oil from the Islands of the Pacific. Most of the oleo reaching Iowa is made in factories located in Illinois, Ohio and Missouri. The stock in these factories is owned there, labor employed there and the laborer's salary and the stockholder's dividends spent there.



This chart shows the comparative cost of manufacturing of butter and oleomargarine This chart is of interest to dairymen and consumer alike, as it shows what becomes of the consumers dollars.

AS TO COST OF MILK

There has been a great deal of discussion within the last year on the cost of milk in the vicinity of Des Moines and central Iowa. We have read with a good deal of interest most that has been written. In my last report to the Governor, I gave some information on this subject, yet the fellow, who on being asked what he knew about the cost of milk, answered by asking the question, "How long is a stick?"—came as near giving an intelligent answer as some of us that have been doing so much writing.

The facts are that this is a question that is difficult of solution, for the reason that conditions are so varied in this section. It may be reasonably easy to go on to any particular farm, and arrive at fair conclusions as to cost in this one case, but this can't be done in a few days or even a few weeks, unless this time is spread over different intervals for a year.

To make this work of any value, this survey should be made on at least 15% of all the farms that supply milk for Des Moines. Assuming that the supply comes from 1,000 farms, when you have finished this work on 150 farms, you will find that it is no small job and requires a lot of time.

For about 37 years I have been more or less a student of dairying. I have never been a believer in the dual purpose cow. For a great many years, beginning in the eighties, there was little encouragement or inducement offered the dairymen or breeders of dairy cattle in Iowa, even by our agricultural college or the Dairy and Food Department.

Steers and hogs were raised and fed at a profit. About this time there appeared on the scene of action the creamery promoter. These men gave the dairy game a set back that it has hardly recovered from, especially in Southern Iowa up to this time. Their mission was to sell a neighborhood a $1,500 or $2,000 creamery building and equipment for from $3,500 to $4,500, and pass on until they found another bunch of "suckers." Their scheme was worked without reference to whether a community had sufficient cows to support a creamery or not, and while many of these glib tongued hot air artists guaranteed 30% on the investment, about all the people have left in most cases, is an old building that stands as a monument to their folly.

You ask what this has to do with the cost of milk in Des Moines at this time. It has much to do with it, as it retarded the growth of the dairy industry to such an extent that it is only within the last four or five years that it has received any attention worth while.

I recall the fact that during the winter of 1910 and '11, the Dairy and Food Commission was interested in the passage of some legislation that seemed to us was much to the advantage of the farmer dairymen of Iowa. During this session, it was hard to find a senator or representative from south of the main line of the C. R. I. & P. Ry. that would give these measures any consideration. Their answer was, ''There is no dairying in our county.'' Many of them did not appear to realize that they represented a section of the state that was in every way better suited to this industry than some of the northern counties that have become wealthy, largely on account of their activities in this industry. It is most gratifying to know that many of the members of the legislature from Southern Iowa have come to know some of the advantages that may accrue to their section by fostering the industry and have in later sessions given it splendid support. They realize that in many sections, the fertility of the soil has been exhausted and that there is no better way to bring it back than by the use of the dairy cow.

It is not at all strange that Iowa has been a little slow in doing the things that will enable us to produce milk and dairy products at a reasonably low cost. With a rich productive soil on which can be grown at a profit most of the cereals, less attention has been paid to dairying, than would have been the case had our soil been less fertile. The growing of beef cattle, with hogs as a side line, makes less work than the handling of the dairy cow with hogs.

Now that the demand for milk and dairy products has increased somewhere in proportion to the increased population, we cannot expect to go among our farmers who have been breeding beef cattle and buy profitable dairy cows, neither can these farmers expect to produce milk at a profit from cows bred for another purpose.

We are frequently asked why the dairymen surrounding Minneapolis, St. Paul and Milwaukee, produce milk at a less price than those in Central Iowa. My answer is, that in the last 15 or

20 years there has undoubtedly been five pure bred dairy sires introduced in the section of country tributary to the above named cities to one in Central Iowa.

It has been demonstrated by the Experimental Station at Ames that daughters of a pure bred dairy sire out of scrub dams average 94% more milk and 62% more fat than their dams, and his granddaughters 245% more milk and 168% more fat than their original dams. This we think conclusive evidence that any section using pure bred dairy sires might naturally expect to produce milk at a much less cost than a section not availing themselves of this advantage. The sooner the people of Iowa and especially those in Southern Iowa come to recognize the fact that the cow is simply a machine for converting our coarse feeds and cereals into edible food, either dairy products or meat and that there is a vast difference in the kind of cows we use, the earlier the question of milk cost will be settled. It is just a question of efficiency. If there were two shoe factories in this city, one with modern machinery 95% efficient, the other with old or obsolete machinery 65% efficient, what chance would the latter concern have in competition with the first named? If he remained in business at all, he would have to get more for his shoes than his competitor, and you know about what chance he would have to do this.

In the early eighties, bran sold in Northern Iowa as low as $4.50 per ton, good mixed clover and timothy hay at $4.50 to $5.00 per ton, corn 25c to 30c per bushel, oats as low as 20 to 25c. Corn and oats were generally mixed in equal parts by weight and ground. The above named feeds composed the dairy ration. The barn and farm equipment was much less expensive than at the present time. Land values were about a fifth of the present ruling prices. Farm labor could be had at $18. to $25. per month and board, day labor from $1.00 to $1.50 per day. Dipped milk sold at 5 to 6c per quart retail. Prices at this time range about as follows: Bran $35.00 per ton, cotton seed meal and gluten feed $60.00 per ton, good mixed hay $25.00, alfalfa $34, corn $1.25, oats 60c per bushel, farm labor $45.00 to $55.00 per month and board, day labor $2.50 to $4.00 per day. Milk prices over the state average around 13 or 14c or a trifle over double the former low price. With this information at hand dairy feeds, land, labor and the cow costing about four or five times what they did, is it fair and reasonable to conclude that milk is too high at present prices?

The farmer dairyman has never been accused of being a very shrewd business man, but it is my opinion that he is shrewd enough not to continue to milk cows and do this work for nothing, when the cow may be disposed of and better returns may be had by selling the farm crops and saving the labor necessary to put his dairy products on the market, whether they be sold as milk, butter or cheese.

Milk and dairy products are cheap at present prices as compared with many of the more common food products. Scientists like Dr. R. V. McCollum, of the Johns Hopkins University, within the last few years have shown that they contain life giving substances known as vitamines so necessary to the proper growth of children, as well as adults.

The public must get themselves into a state of mind so that they are willing to pay a fair price for dairy products the same as for other food products if they expect to continue to use them as they should be used. Remember there are no substitutes for dairy products.

HUMAN FOOD PRODUCED BY FARM ANIMALS FROM 100 POUNDS OF DIGESTIBLE MATTER CONSUMED

Animal	Edible Solids Produced
Cow (milk)	**18.0 pounds**
Pig (dressed)	**15.6 pounds**
Calf (dressed)	**8.1 pounds**
Poultry (eggs)	**5.1 pounds**
Poultry (dressed)	**4.2 pounds**
Lamb (dressed)	**3.2 pounds**
Steer (dressed)	**2.8 pounds**
Sheep (dressed)	**2.6 pounds**

FEEDING FOR MILK PRODUCTION

By Prof. H. H. Kildee, Animal Husbandry Department, Ames, Iowa.

Selection of Feed-Stuffs.

In securing the lowest possible cost of production, and ultimately the largest profit, from the herd, the proper selection of feeds is important. The primary object of the feeder, in all cases, is the maximum production of milk for least expenditure of feed. While each feed-stuff is fairly uniform, so far as nutrient content, effect on the system and palatability are concerned, it is impossible to recommend a particular ration which will prove most economical and efficient at all times, because feed-stuffs vary in price in different seasons and localities, and also because the feed requirements may vary with each individual cow.

Characteristics of a Good Ration.

The general requirements which should be met by rations for dairy cows are as follows: Palatability, variety, bulk, succulence, balance of nutrients, proper effect upon the system and economy.

Palatibility is a factor of great importance, for, no matter how good the ration is from the standpoint of digestible nutrients contained, the best results can not be expected unless it appeals to the cow's appetite. To secure this palatability, feeds of good quality liked by the cow should be fed in a clean manger. All grains, such as oats, barley, and corn, give best results when ground.

A cow soon tires of a ration made up of but one or two feeds and as radical or frequent changes in the ration are not conducive to the best results, it is important that feeds be so combined in the ration as to give variety. This variety is essential for the dairy cow because, unlike the beef steer, she is on feed for a long period and for successive periods.

Bulk is required to help make digestion in the roomy digestive tract as thorough as possible; moreover, the bulky feeds grown upon the farm are the cheapest feeds. When bulk is lacking the digestive juices do not act as thoroughly upon the small, compact food mass and all the digestible nutrients cannot be utilized. This bulk is obtained not only through feeding alfalfa and clover hays and corn silage, but also by making the grain ration rather bulky. Corn and cob meal, ground oats and bran are bulky and all are good for the dairy cow. The most economical milk production can be secured only when the roughages produced upon the farm are utilized to the best advantage, especially when some high protein or leguminous hay is grown, such as clover, alfalfa, oats and Canada field peas, soy beans or cow peas.

Succulent feeds are very essential in profitable milk production. During the summer months succulence may be obtained from pasture grass, until the hot, dry weather makes it necessary to add corn silage or soiling crops. For winter feeding, corn silage is the most economical source of succulence under most farm conditions. Succulence is needed partly because the dairy cow is producing a product high in per cent of water, and partly because it has a good effect upon her system.

What "Balance" Means.

By balance of nutrients is meant a proper proportion between the digestible nutrients, protein, carbohydrates, fat and ash. Every food nutrient has several functions to perform in the body. The carbohydrates are used largely for the production of heat and energy, but may also be converted into body fat and stored as such. In the case of the milk-producing cow, a large quantity of the carbohydrates is used in the production of butter fat and milk sugar.

The fats are more concentrated heat and energy producers than carbohydrates, a given quantity having two and one-fourth times the heat and energy value. They serve the same purpose as the carbohydrates in the ration.

Proteins are used for building up and replacing muscular and other active tissues. In the case of milk-producing cows they are used in the production of the casine and albumin of milk. In the case of pregnant animals, proteins are used for the growth of the fetus. Proteins cannot be replaced by either fats or carbohydrates for the building of body and milk protein. Owing to the fact that their cost is usually much greater than that of the carbohydrates, where they are only equal in value to the carbohydrates in heat and energy production, proteins should not be fed in excess of the amount necessary for body maintenance and milk secretion.

The ash or mineral matter has not received the attention it merits from the feeders of live stock, but experimental work in progress at a number of the stations indicates that in the near future this nutrient will receive much more attention. The main function of the ash is to build up bone in the growing animal and also in the fetus, and to form the mineral portion of milk.

The best combination of these nutrients will vary with the individual cow, the quantity and quality of milk she gives, the prices of feed-stuffs, and her condition as to whether she is pregnant or not. Cows that have a tendency to become too fleshy need less carbohydrates and more protein in proportion, and cows with the opposite tendency more carbohydrates. As milk contains relatively large amounts of protein, fats and ash, the ration fed should carry a liberal supply of these nutrients so that the cow will not have to draw from her own body to make up a deficit. At the Wisconsin Experiment Station it was found that in 110 days a dairy cow, fed a liberal ration, yet one deficient in lime, gave up 25 per cent of all the lime of her skeleton. Similar results have been secured where cows have been fed rations sufficient only to maintain their bodies and not for milk production. Body tissue is sacrificed in order that the cow may secrete milk. Many of the cows on the Iowa farms today are doing this same thing. They produce milk in fair quantities for a few months after calving, not because of the ration made up solely of ear corn, timothy hay and corn stalks, but in spite of it. However, after they have drawn upon their own bodies as long as they can they rapidly decline in milk flow after five or six months. In many cases this lack of persistency is due to inherited characteristic as well as to failure to feed, especially for milk production.

The proper effect of feeds upon the digestive system can be secured by a study of the characteristics and influenze of different feeds. It is important to consider whether the feed or combination of feeds will have a cooling, laxative effect upon the digestive tract, or whether it will be heating and constipating.

The ration must be economical. In selecting feed-stuffs, thought must be given to the relative values of different feed-stuffs as well as to their price per pound. Home-grown feeds should be used so far as practicable. However, it is more profitable at times to sell most of the grain and purchase by-product feeds to be used in conjunction with the corn silage and clover or alfalfa hay. This point should receive the careful attention and best thought of the owner of live stock. Where the dairy farm produces clover, alfalfa and oat and pea hays, a large amount of the only nutrient the Iowa farmer needs to buy, protein, may be secured cheaply. No dairy farm is complete in its equipment without at least one silo for winter feeding and one with a smaller diameter for summer feeding. The two most common succulent feeds for winter are corn silage and roots. Experimental work has proved that silage, as compared with roots, yields more heavily per acre, costs much less and gives equal results from similar weights of dry matter. Silage is also very desirable for the herd during the latter part of July and most of August, when pastures are usually very short, due to hot weather and lack of rainfall. The value of silage or soiling crops at this season does not lie solely in the temporary increase of milk flow, but also in maintaining it, for after a cow once decreases in her milk flow it is practically impossible to bring her back to normal for the remainder of her lactation period. Contrary to the opinion formerly held, milk from silage-fed cows is not inferior in flavor or odor to milk from cows fed dry feed. Great care should be taken, however, to prevent the odor of silage from contaminating the freshly-drawn milk, which takes up odors very quickly. It is best to feed the silage after milking, and just what will be eaten up clean at that feed. The silo should be shut off from the barn proper.

Preparing the Cow for Her Year's Work.

The proper time to begin feeding a cow for milk production is six to eight weeks prior to freshening. She should have at least this length of time to rest and prepare for the next lactation period. The feeds given at this time should meet the following requirements: Rest and cool out the digestive tract, supply nourishment for the growth of the fetus or unborn calf, and build up the flesh and strength of the cow herself.

For the cows that are to freshen during the summer or early fall it is a good plan to have a small pasture set aside so that they may have abundance of pasture grass and not be molested by the other cows. In addition to this a few pounds of ground oats and in some cases a small quantity of bran will be sufficient. Cows that are to freshen during the winter should receive from 20 to 25 pounds of corn silage, all the clover or alfalfa hay they desire and a grain mixture of three parts ground oats, two parts bran and one part oil meal. The amount of grain per day is to be governed by the individual animal. Animals thin in flesh may be given a small quantity of corn but should not be crowded, but rather fleshed up gradually. Timothy hay and cottonseed meal are not desirable as they are rather constipating, while laxative feeds are needed at this time. Too large a quantity of corn is likely to have a bad effect upon the system. It is well to reduce the ration slightly just prior to calving as by so doing the danger of milk fever and after-calving troubles is decreased to some extent.

A few days before calving put the cow in a clean, disinfected, well-bedded boxstall, if her bowels are not moving freely, a dose of three-fourths to one pound of epsom salts or one quart of raw linseed oil will prove very beneficial. A grain ration of two parts bran and one part oil meal is very good at this time.

For a few days after calving the cow's drinking water should be luke warm. In addition to alfalfa or clover hay and a small quantity of silage, she should be fed bran mashes or a small allowance of bran, oil meal and ground oats. If the cow does not pass the afterbirth promptly and the man in charge does not understand the anatomy of the reproductive organs, a competent veterinarian should be called; that should be done also when the cow has difficulty in calving.

Care of Cow First Thirty Days After Calving.

If the cow has been properly cared for the first three days she may then be placed on dry and more solid food. The manner in which she is fed during the next thirty days determines largely the character of the work she will do during her lactation period. Experienced feeders of beef cattle realize that thirty days are required to get steers on full feed, and likewise, the dairy cow needs to be given thirty days. Without doubt parturition weakens the digestive apparatus and heavy feeding soon after calving is liable to be followed by indigestion, bloat or impaction. During the first thirty days after parturition the maternal instinct is at its highest pitch and during this time, if properly cared for, the cow can be brought to her greatest possible milk flow.

To do this, the feeds must be suited to the individual cow's needs. Beginning on the fourth day with five pounds of grain daily, the ration should be increased slowly—say at the rate of half pound each alternate day. This rate of increase is rapid enough, for the cow will respond as well to a half pound increase as she will to a pound. This increase may continue just as long as the cow continues to increase profitably in her milk flow. When she ceases to respond, then the feed should be lessened in the same gradual manner for a few days and it will, as a rule, be noted that the cow will further increase in milk flow. The feed given on the day she begins to decline in milk determines practically the amount of grain she should receive. Much less than this amount will not compel her best work and any additional feed will be worse than wasted.

The exact amount and quality of the food will be determined by the condition and individuality of the cows. Seldom do two cows demand to be fed in exactly the same way. Cows inclined toward beefiness require a narrow ration, or one containing a proportionately large amount of protein; cows of the srictly dairy type, inclined to work hard and become thin in flesh, need to be fed more extensively of foods rich in carbohydrates. Cows of large capacity and the ability to produce great volumes of milk, require more than cows with less capacity and ability.

Amount to Feed.

The amount of feed given the cow is of great importance. The average dairy cow requires about 50 per cent of a normal ration for maintenance. Consequently, if this cow is fed but one-half the normal ration, she receives simply enough to maintain her body and the milk she gives will be produced at the expense of her body tissues. Under such conditions the flow of milk would no doubt keep up for a time, but the animal would not be able to continue the work and her strength for a very long period. This is one of the chief reasons why cows on many farms drop off rapidly in milk flow after the first two or three months of their lactation periods. It is poor economy to underfeed the dairy cow because her maintenance requirements for the year will remain the same and her milk production will be certain to suffer.

There are cows that are overfed, thus receiving food in addition to the requirements for maintenance and milk production, and this extra food is used for fat formation. This happens where all the cows are fed alike, irrespective of lactation period and production. This is also poor economy, because when many cows start to "flesh up" they continue to do so at the expense of milk production.

The best ration will depend upon the condition, individuality and record of the cow, but it is a common practice to allow one pound of grain for each two and a half to four and a half pounds of milk produced, depending upon the richness of the milk, or six to eight pounds of grain for each pound of butter fat. In addition to this grain ration, the average cow should receive one to one and a half pounds of clover or alfalfa hay and two and a half to three pounds of corn silage for each 100 pounds live weight.

ADVANTAGES OF DAIRYING

Dairying maintains the fertility of the soil.
Dairying furnishes a steady income.
Dairying furnishes a steady employment of labor.
The market for dairy products is steady.
Dairying utilizes unsalable roughage.
Dairying affords opportunity for increased income.
Dairying utilizes waste land.

THE WORK OF THE IOWA STATE DAIRY ASSOCIATION

INCREASED PRODUCTION NECESSARY

The necessity for the increase in the production of dairy products is more essential now than ever before. This is shown most emphatically in a brief summary of the imports and exports of dairy products for the past five years; figures for which have been obtained through the Dairy Division, U. S. Department of Agriculture.

During the year 1913 the United States imported large quantities of dairy products from foreign countries in the form of cheese, amounting in round numbers to 460,000,000 pounds. In 1914 the amount of dairy products coming to this country amounted to 700,000,000 pounds, 90,000,000 of which was in the form of butter and 610,000,000 in the form of cheese.

In 1913 we exported approximately 50,000,000 pounds of butter and 30,000,000 pounds of condensed milk, but in 1914 we did not export butter at all and the exports of condensed milk fell to about 10,000,000 pounds.

In 1915 the great change came; we did not import dairy products to any extent but became a great exporting nation.

In 1915 we exported 120,000,000 pounds of butter, 80,000,000 pounds of cheese and 15,000,000 pounds of condensed milk. During 1916 we increased these exports to 275,000,000 pounds of butter, 125,000,000 pounds of cheese and 350,000,000 pounds of condensed milk. During the year 1917 we more than doubled the exports of 1916. Our butter exports amounted to 550,000,000 pounds. Our cheese exports reached the $510,000,000-pounds mark and our condensed milk amounted to 600,000,000 pounds.

The year 1917 was the banner year. It was one of excitement, as all will remember. High prices prevailed and prosperity for the dairymen seemed to be assured. The question was then, and is now, "How did we do it?" The answer is simple. We saved, we conserved, we produced more.

The figures for 1918 are only preliminary, but they reflect the experience of the industry rather accurately. In February, 1918, the dairy interests began to be alarmed. The markets were congested, prices for milk and butterfat were getting low, but the price of feed and labor continued at the high water mark.

Dairymen were afraid. The condenser companies and creamerymen offered no encouragement, and when the dairymen got together in Chicago, April 12th and 13th, they were a serious bunch. It was learned that ships for transporting dairy products were not available and hence, the markets could not be cleared by exportation.

Good business management prevailed. The people were advised to eat more and they did. This government and foreign governments used their purchasing power and the day was saved. No one was hurt seriously and the dairy industry remained intact.

During 1918 it is estimated that we will export approximately 320,000,000 pounds of butter, 330,000,000 pounds of cheese, and 1,250,000,000 pounds of condensed milk.

The exportation of butter and cheese dropped off considerably, but the condensed milk exportation made up the shortage, so that our total exports will be far in excess of the year 1917.

In 1913 when we imported 460,000,000 pounds of cheese dairy product, we had the production of 90,000 cows estimating that the average production was 4,000 pounds per cow, while we were exporting butter and condensed milk from approximately 15,000,000 allowing the same production per cow

In 1914 we exported the products of approximately 5,000 cows and received the products of 175,000. In 1917 we exported the product of approximately 375,000 and in 1918 it is estimated that the products of 490,000 cows will be shipped abroad.

With less than half the milk cows in Europe, that were there before the war the indications are that the United States will not only be required to continue to furnish dairy products but she must also supply thousands of dairy cattle for foundation stock in the devastated countries.

BUILDING IOWA HERDS

Due to the shortage of labor and the high cost of feed for the production of milk many herds in Iowa have been dispersed. The cost of production has also caused many dairymen to investigate the profitableness of their cows and has resulted in the sale of the unprofitable animals. All of these factors have had a tendency to reduce production. In order to overcome this loss the Iowa State Dairy Association has been bending its efforts toward the organization of dairy calf clubs, and assisting the farmers to purchase high grade and pure bred dairy cattle.

The clubs which were organized in 1917 and completed their work in 1918 are as follows:

Organized by	Location	No. of Calves
Farmers Savings Bank	Barnes City	40
Central Savings Bank	What Cheer	42
First Savings Bank	Sutherland	61
Brighton State Bank	Brighton	45
Leavitt and Johnson Bank	Waterloo	189
First National Bank	New Sharon	28
Iowa Savings Bank	Wellman	65

The clubs organized during 1918 and which will close their year's work in 1919 are as follows:

Organized by	Location	No. of Calves
Farmers Co-operative Creamery	Britt	32
National Bank of Decorah	Decorah	169
Farmers Co-operative Creamery	Exira	34
Merchants National Bank	Grinnell	25
First National Bank	Iowa City	52
Farmers Co-operative Creamery	Klemme	38
Farmers Co-operative Creamery	Leland	46
All Banks Co-operating	Milford	64
Riceville Creamery Co.	Riceville	20
Saratoga Co-operative Creamery	Cresco	32
Supt. of Schools	Strawberry Point	22
Farmers Co-operative Creamery	Victor	10
Bank of Woden	Woden	28
Farmers Co-operative Creamery	Clear Lake	12

OTHER WORK

From November 1 1917, to November 1, 1918, representatives of the Association met 153 audiences. The records of attendance show that 21,584 people were reached. Of the 153 audiences 38 were in attendance at farmers institutes and 115 at creamery and dairy meetings.

A special campaign was conducted in the southern part of the state during the winter of 1917 and 1918. The Association worked in connection with the Dairy and Food Commission and Iowa State College.

Community Dairy Shows have been conducted in connection with most of the Association meetings.

During the spring and fall months when the work is urgent on the farm and it is therefore difficult to hold meetings, bulletins are sent to the local newspapers. These contain timely suggestions which assist the farmer in solving the problems which confront him with reference to his dairy herd. They are written with the idea of assisting the creameries in improving the quality and quantity of raw product. The newspapers are lending their assistance by giving the information a prominent place in their columns.

A service department to assist the man just entering the dairy business to locate and purchase foundation animals for his herd was also conducted. The object of this department is to bring the man who has dairy cattle for sale in contact with the man who wishes to buy. A large number of farmers have taken advantage of this service and many of them have been enabled to purchase the animals they desired at a much smaller expense than if they had attempted to locate the stock themselves. It has been a means of encouraging the purchase of pure bred dairy sires to head herds of ordinary type in many sections of the state.

The Dairy Cattle Congress which was originally started by the Association and is now recognized as one of the two great national dairy expositions was fully as successful this year as before in spite of the war conditions This show brings dairy cattle breeders with their choice animals from every part of the United States and offers the farmers of not only Iowa, but the Mississippi Valley an opportunity to become acquainted with the various breeds. Premiums are offered for butter, cheese, and milk, which in addition to the display of dairy appliances and farm implements, bring thousands of prosperous farmers. The convention proper is held in a building on the grounds, the subjects of interest to the buttermakers, creamery men and dairymen are discussed by authorities of national reputation.

Good authorities tell us that six and eight-tenths pounds of corn fed to a good beef steer will produce one pound of live weight worth 16 cents.

This same feed or its equivalent in cost will produce a pound of butterfat worth 60 cents when fed to a good dairy cow.

You must sell the steer before you get the 16 cents and you have nothing left. After receiving 60 cents for the butterfat you have the cow left to go on and produce her like and continue to act as a source of income.

The difference between the price that the steer returns for the feed and what is received for the butterfat is 44 cents. We think this fair compensation for your labor.

LAWS ENFORCED BY DAIRY AND FOOD COMMISSIONER

DAIRY LAW

The object of the dairy law is to insure the manufacture of clean, wholesome dairy products of uniform quality and possessing high nutritive value, and to encourage and promote all branches of the dairy industry, thereby securing for Iowa farmers a steady and fair market for one of Iowa's most valuable agricultural products.

FUNCTION OF ASSISTANT COMMISSIONERS AND DAIRY INSPECTORS

Inspection and educational work relative to sanitary conditions of dairy farms, cream buying stations, creameries, condensed milk factories, cheese factories, ice cream factories.

EDUCATIONAL WORK AT CREAMERIES

Instructs buttermakers in new methods of handling raw materials and manufacture of butter.

Confers with and addresses creamery boards and assists in moulding policies of the creameries.

Assists in the building of new and remodeling of old creameries, and installation of new equipment.

Periodically checks moisture content of the butter being made.

Periodically checks salt content of the butter being made.

Studies methods of manufacture at the creameries for the purpose of increasing the efficiency of the plant.

Checks costs of production and costs of marketing.

Advises creamery as to best sources of equipment and materials.

Assists in securing frequent and regular transportation facilities.

Assists in securing satisfactory markets in our eastern cities for butter.

Tests creamery scales, both test scales and platform scales, to insure accuracy and fair dealing.

Schools operators in conducting babcock test.

Holds examinations to determine competency of candidates to hold license to perform babcock test.

Checks and controls production of navy butter.

Checks and controls production of Iowa trade-marked butter.

Assists in the organization of cow-test associations and calf clubs.

Assists in educational work tending to promote greater and more economical production of milk and cream.

INSPECTION WORK IN THE FIELD

Inspects stocks of butter and butter substitutes at, warehouses, stores, bakeries and restaurants to see that illegal butter and illegal butter substitutes are not carried in stock or offered for sale.

Investigates and conducts cases relative to testing of milk and cream by unlicensed babcock operators.

Investigates complaints relative to unlicensed milk plants and milk depots.

Investigates complaints relative to false reading of babcock test and other unfair practices.

Investigates complaints relative to the application of the anti-discrimination law as affecting the purchase of butter fat.

FUNCTION OF THE LOCAL MILK INSPECTORS

In charge of local milk inspection work under supervision of State Milk Inspector.

Inspects dairy farms supplying market milk to his district.

Inspects conditions, scores and keeps records as to sanitary conditions of dairies, milk plants and milk depots.

Periodically tests percentage of fat and solids in milk sold in his territory.

Periodically secures and forwards samples to the department laboratory for scoring and bacteriological analysis.

Investigates complaints as to quality of milk delivered and relative to violations of the laws pertaining to the production and sale of milk in his territory.

FOOD LAW

The object of the food law is to prevent the manufacture and sale of harmful, deleterious and adulterated foods or foods which are sold under false representation as to their quality or value.

FUNCTION OF FOOD INSPECTORS UNDER FOOD LAW

Inspect Iowa establishments where foods are manufactured to see that no harmful or fraudulent adulterant enters their composition.

Inspects conditions under which foods are stored, transported and sold to see that adulteration is not practiced.

Surveys and forwards to laboratory samples of foods which he suspects or concerning which he receives complaint as to quality, adulteration or short weight.

Inspects retail establishments to see that no illegal food-stuffs are carried in stock.

Inspects quality of eggs, poultry and other farm produce sold to buyers and handled through trade channels to see that these produce are not spoiled or in a condition which would lead to their being spoiled before reaching the consumer.

SANITARY LAW

The object of the sanitary law is to insure cleanliness in the manufacture, distribution and sale of foods.

FUNCTION OF INSPECTORS UNDER SANITARY LAW

Determines sanitary conditions in establishments where foods are manufactured, prepared, stored and sold.

Sees that raw materials are in sound condition and that decayed and other unwholesome materials are kept out of food products.

Sees that no diseased persons are employed in establishments where foods are manufactured or sold.

Sees that foods are properly protected from dust, dirt, foul odors, flies, rodents and other contaminating agencies.

Sees that restaurants, hotels and other similar establishments maintain proper toilet and washroom facilities in order that employees can keep clean.

SEED LAW

The object of this law is to prevent the sale of undesirable varieties of seeds, seeds of low germination, dirty seeds, seeds containing excessive amounts of weed seeds, and seeds which are short in weight.

FUNCTION OF INSPECTORS

Inspects seed houses to see that seeds are properly cleaned and stored.

Traces the origin of seeds to see that undesirable and too slow maturing varieties are not imported.

Sees that packages of seeds are full weight.

Investigates complaints relative to fraudulent dealing in seeds.

Samples stocks of seeds and sends samples to laboratory for analysis.

WEIGHT AND MEASURE LAW

The object of the Weight and Measure law is to secure for all the true weight or measure of the commodity sold or purchased.

FUNCTION OF THE WEIGHT AND MEASURE INSPECTORS

Inspects and tests accuracy of all weights, measures and scales used in the purchase and sale of articles of commerce.

Checks weights or measures of articles bought and sold by weight or measure to see that proper weights and measures have been given.

Inspects heavy wagon, elevator and mine scales to see that they are properly installed and kept adjusted.

Investigates complaints relative to false weights and measures and other violations of the weight and measure law.

CONCENTRATED COMMERCIAL FEEDING STUFFS LAW

The object of this law is to secure fair dealing in the sale of commercial feeds.

FUNCTION OF INSPECTORS

Examine stocks of feeds to see that they are properly labeled as to quality, etc., and to forward samples to laboratory for analysis and comparison of feeding value.

Inspect stocks of feeds to see that packages bear tax tags.

Other laws enforced by this department are:

Paint and Linseed Oil Law,
Turpentine Law,
Cold Storage Law,
Commercial Fertilizer Law,
Calcium Carbide Law,
Insecticide and Fungicide Law.

The duties of inspectors under these laws are similar to their duties under the laws in which duties are set forth in detail.

SUMMARY

During the year ending November 1, 1918, our inspectors have inspected a total of 23,028 establishments as follows:

Grocery	4,032
Meat Market	3,558
General Store	2,383
Bakery	814
Slaughter House	124
Restaurant	1,813
Coal Dealer	1,253
Elevator	1,155
Feed Store	474
Ice Cream Factory	651
Creamery	1,536
Dairymen	643
Farm Dairy	240
Confectionery	493
Wholesale Grocer	434
Seed Dealer	80
Bottling Works	131
Cream Station	2,031
Produce	716
Miscellaneous	467
Total	23,028

The following tabulation shows the nature of samples analyzed in our laboratory during the year:

Cream and Milk	1,110
Ice Cream	103
Paints and Oils	16
Miscellaneous Food Products	397
Samples for Attorney General and County Attorneys	83
Samples for Pharmacy Commission	8
Stock Foods	304
Seeds	69
Bacteriological Analysis	347
Board of Control	23
Total	2,460

DEPARTMENT FINANCES

Fees Received Year Ending October 31, 1918.

Inspection Fee Tags	$23,157.08
Sanitary Law Licenses	11,526.00
Scale Inspection Fees	7,345.61
Babcock Test Licenses	5,230.00
Scale Tag Licenses	4,365.00
Stock Food Licenses	3,575.00
Milk Licenses	2,938.00
Commercial Fertilizer	320.00
Cold Storage	225.00
Butter Trade-Mark Expenses of Wrappers and Labels	35.39
Feeding Stuff Analysis	34.00
Seed Analysis	11.00
Total	$58,762.08

EXPENSES YEAR ENDING OCTOBER 31, 1918.

Name	Salary	Expenses	Total
W. B. Barney	$ 2,700.00	$ 277.79	$ 2,977.79
E. L. Redfern	2,400.00	40.75	2,440.75
L. P. Anderson	1,600.00	1,017.25	2,617.25
J. S. Bittner	1,600.00	704.06	2,304.06
C. S. Bogle	1,650.00	781.06	2,431.06
A. B. Briggs	1,600.00	1,413.20	3,013.20
B. O. Brownlee	1,600.00	1,140.65	2,740.65
T. A. Clarke	1,600.00	1,041.63	2,641.63
L. L. Flickinger	1,600.00	1,069.70	2,669.70
M. E. Flynn	1,600.00	731.00	2,331.00
G. M. Lambert	1,600.00	1,008.79	2,608.79
H. W. McElroy	1,600.00	889.26	2,489.26
J. W. Milnes	1,600.00	727.13	2,327.13
E. J. Nolan	1,600.00	1,843.04	3,443.04
C. Ottosen	1,600.00	1,007.59	2,607.59
Dr. O. P. Thompson	1,600.00	1,409.34	3,009.34
S. O. Van De Bogart	1,600.00	735.65	2,335.65
W. H. Harrison	2,000.00	77.55	2,077.55
F. W. Stephenson	1,566.64	555.41	2,122.05
*E. C. Lytton	1,350.00	28.10	1,378.10
*R. E. Clemons	1,288.79	858.28	2,147.07
*M. E. McMurray	902.12	711.00	1,613.12
*H. E. Forrester	946.21	770.52	1,716.73
*E. A. Countryman	871.04	534.84	1,405.88
*C. O. Frazer	755.55	380.84	1,136.39
*L. P. Shaffer	683.87	411.19	1,095.06
*H. A. Stearns	424.69	218.79	643.48
*Humphrey Richards	399.99	228.13	628.12
*A. W. Day	1,083.33		1,083.33
*P. W. Crowley	1,050.00	155.10	1,205.10
R. V. Murphy	1,125.03		1,125.03
Elma Schnack	900.00		900.00
*Florence Gallarno	704.02		704.02
*Rene Thorson	575.82		575.82
*Mrs. Vera Thompson	225.00		225.00
*Margie Garrity	77.42		77.42
*G. H. Chittick	375.00	4.15	379.15
*W. G. Jordan	775.02		775.02
*W. C. McCarney	336.54		336.54
Janitor Service		826.67	826.67
General Expense		2,850.47	2,850.47
Inspection Fee Tags		2,800.20	2,800.20
Milk Agents' Fees		4,250.46	4,250.46
Milk Agents' Expense		426.96	426.96
Freight and Drayage		180.18	180.18
Telephone		92.93	92.93
Express		58.02	58.02
Electricity		26.01	26.01
Telegraph		22.08	22.08
	$47,566.08	$32,305.77	$79,871.85

*Employed less than a year.

CITY MILK LICENSES

Table showing the number of milk licenses issued to city milk dealers for each year from 1909 to 1918. In each case the year ends on July 4th.

Year	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
Number	1,149	1,106	1,310	1,908	2,038	2,189	2,365	2,729	2,858	2,936

LOCAL STATE MILK INSPECTORS OF THE STATE OF IOWA

Cities	Inspectors
Boone	Maurice Healy, M. D.
Burlington	W. F. Schroeder
Cedar Rapids	Phillip Pray
Council Bluffs	W. M. Hendrix
Davenport	W. J. High
Des Moines	W. B. Barney, Jr.
Clinton	J. H. Spence, D. V. S.
Dubuque	J. N. Graham, D. V S.
Ft. Dodge	Francis Ludgate, M. D. C.
Iowa City	C. S. Chase, M. D.
Keokuk	Geo. R. Narrley, M. D.
Marshalltown	R. M. Allen, D. V. S.
Mason City	A. L. Wheeler, M. D.
Muscatine	C. J. Hackett, D. V. S.
Ottumwa	B. W. Van DerVeer
Sioux City	W. D. Hayes, C. P. H.
Waterloo	E. J. Eaves

CREAMERY STATISTICS OF IOWA

SHOWING POUNDS OF MILK AND CREAM RECEIVED, POUNDS OF BUTTER MADE AND DISPOSITION OF SAME, SO FAR AS REPORTED

County	No. of creameries reported	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold outside the state	Pounds sold in Iowa
Adair	3	133,192	1,145,492	402,057	36,486	320,428	76,736
Adams	1		244,450	88,391	9,863	60,853	17,675
Appanoose	1						
Allamakee	7		544,549	1,842,689	74.908	1,698,384	82,583
Audubon	6	54,371	1,491,920	521,948	43,824	368,712	54,046
Benton	4	220,000	1,183,380	160.057	2,300	72,981	76,953
Black Hawk	12	11,669,510	4,075,122	1,930,973	90,374	1,197,956	619,488
Boone	1	129,367	41.857		5,786	36,071	
Bremer	24	60,650,069	1,771,786	3,631,868	287,820	2,208,684	180,545
Buchanan	6	10,511,222	876.048	1,346,105	104,674	1,119,546	117,600
Buena Vista	3	435,468	1,166,090	403,534	22,187	315,548	102,396
Butler	9	2,317,093	2,619,654	1,111,839	74,256	11,561,873	125,442
Calhoun	4	99,530	702,625	374,274	26,041	367,853	35,344
Carroll	7	333,939	1,958,808	748,412	20,699	252,269	414,825
Cass	2	1,450,471	602,301	456,760	575	377,906	53,258
Cedar	5	43,527	2,487,622	852,397	45,950	529,482	760,610
Cerro Gordo	7	626,631	7,776,082	2,346,220	55,437	2,044,404	256,353
Cherokee	1		68,246	20,474	100	6,984	9,656
Chickasaw	9	6,314,899	4,406,292	2,114,613	148,204	3,760,902	74,596
Clay	7	268,000	935,397	546,263	52,047	485,511	12,211
Clayton	13	14,576,545	4,737,177	2,249,335	113,856	1,888,756	171,431
Clinton	5	15,266	1,058,610	1,519,321	25,725	1,199,866	107,523
Crawford	1	89,334	935,922	379,425	156	355,378	12,094
Dallas	1	130,750	131,799	52,360	7,500		44,858
Delaware	11	11,523,962	2,592,250	2,414,052	130,488	1,973,689	175,976
Des Moines	1	14,392	356,160	140,675	589	39,607	134,897
Dickinson	4		1,177,925	589.228	352,949	591,113	59,797
Dubuque	15	5,802,366	3,248,005	3,724,503	168.871	3,346,984	287,342
Emmet	2	57,272	1,203,227	341,466	27,845	338,400	7,659
Fayette	19	21,659,482	7,087,827	2,954,021	201,579	2,258,456	491,081
Floyd	4	61,678	1,545,330	757,293	26,709	566,235	185,915
Franklin	6		2,309,325	727,703	32,375	602.547	164,390
Greene	1		111,239	42,737	5,535	14,299	22,903
Grundy	4	536,407	1,221,149	623,262	44,361	612,976	9,486
Guthrie	5	84,412	1,073,817	345,879	17,883	146,552	137,273
Hamilton	5	645,827	401,006	131,347	20,843	71.136	13,332
Hancock	6	69,463	4,062,564	1,172,440	50,159	1,063,377	30,934
Hardin	11	90,975	3,082,442	2,153,000	95,034	784,182	134,256
Harrison	1	91,000		25,000			
Henry	1			13,000			
Howard	9		3,951,176	1,419,626	33,284	1,207,733	190,619
Humboldt	5	181,000	1,691,931	608,382	22,331	408,712	147,788
Ida	1			10,800	2,000	8.800	
Iowa	7	22,000	1,627,531	563,911	34,146	312,015	233,629
Jackson	9	57,710	3,784,375	1,328,715	38,321	1,207,739	83,347
Jasper	1		251,600	75,491	252	4,672	70,819
Johnson	2		981,221	314,360	152,000	162,434	
Jones	7		5,393,560	1,673,873	111,304	1,262,553	96,668
Keokuk	2		688,424	272,054	1,000	222,684	48,370
Kossuth	14		4,261,864	1,531,636	146,457	1,130,204	117,262
Lee	2		1,273,189	1,421,851	36,915	1,279,369	87,891
Linn	6		3,938,430	1,404,238	42,528	1,062,836	222,147
Lucas	1		527,699	121,098	112,000	9,098	
Lyon	3		614,657	646,838	9,753	242,206	1,285,225
Mahaska	2			323,042			
Marshall	3		1,172,147	634,145	41,438	483,165	119,642
Mitchell	7		9,855,720	1,411,666	99,641	1,247,556	64,338
Mills	1			56,390	1,096	36,432	18,862
Monroe	1		118,500	40,000	1,000	30,000	

CREAMERY STATISTICS OF IOWA—Continued.

County	No. creameries reported	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold outside the state	Pounds sold in Iowa
Montgomery	2		868,991	161,101	5,177	38,924	8,000
Muscatine	1		305,851	77,675	3,483	54,929	19,048
O'Brien	3	110,000	832,041	363,227	15,805	164,277	83,145
Osceola	4	18,434	556,068	327,547	19,385	291,486	16,826
Page	1		715,937	871,841		790,267	45,587
Palo Alto	9	860,725	3,510,202	1,191,984	130,494	966,434	97,989
Plymouth	1	275,000	98,000	40,000	500		35,500
Pocahontas	2	28,800	360,557	128,487	9,812	84,244	34,431
Polk	4	7,105,358	8,762,830	2,825,182		975,078	336,221
Pottawattamie	1			1,439,483		1,141,384	298,000
Poweshiek	2	193,030	403,880	158,824	3,306	77,768	78,814
Ringgold	1		148,000	50,000	200	23,000	25,000
Sac	2		127,820	221,350	21,917	104,033	45,358
Scott	3		1,040,647	783,663	288,932	350,069	165,929
Shelby	2		32,220	131,005	14,717	116,226	
Sioux	7	416,298	3,557,884	1,613,718	71,237	1,461,047	63,062
Story	8	147,444	1,692,868	643,103	111,400	383,042	136,957
Tama	2		1,148,000	160,000	10,000	130,000	10,000
Taylor	1		178,095	204,556	16,000	132,564	56,000
Union	2	118,506	2,475,695	843,447	4,356	725,677	65,981
Van Buren	1		34,565	41,000	2,750	31,750	6,500
Wapello	3		3,404,663	1,683,521	44,246	912,789	732,315
Wayne	1		3,009,068	658,506	1,876	613,720	42,910
Webster	4	213,466	1,747,081	387,930	12,391	56,621	326,154
Winnebago	9	1,149,701	5,297,597	1,473,322	153,981	1,580,126	78,797
Winneshiek	11	19,715	7,582,014	255,316	71,426	2,138,892	334,147
Woodbury	3	2,519,660	29,594,806	11,993,096	1,000	913,323	984,183
Worth	9	11,596	3,609,998	1,236,016	73,630	926,714	198,964
Wright	3	143,569	997,823	271,372	15,918	175,192	80,175
	420	158,882,622	192,658,720	83,349,309	4,383,393	68,317,684	12,444,064

PART VI

Excerpts From the Proceedings of the Forty-first Annual Meeting of the Iowa State Dairy Association

Immediately following the banquet of the Iowa State Dairy Association and State Dairy Council in the Russell-Lamson Hotel dining room, the meeting was called to order at eight o'clock by Toastmaster Hugh G. Van Pelt.

Ladies and Gentlemen, Members of the Iowa State Dairy Association, State Dairy Council and Allied interests:

I take great pleasure in seeing as many present this evening at this one session of the Iowa State Dairy Association as there are. I could not help but think as I was listening to the conversation around at these tables and the pleasantries that have been going on of just how banquets seem as a rule and just how I hope this banquet will not seem to you this evening. To illustrate this I will tell a little story that was told last Monday evening at the Rotary meeting regarding the Irishman, whose wife was very ill. She called him into the room and said, "Pat, I am not going to live, I am going to die and I have just one dying wish that I would ask. I have asked for many things during my life that have not been granted but I wish you would grant this one thing that I ask on my death bed." "Sure Biddy, and I'll grant this one wish and what may it be?" "I wish", said Biddy, "That on the day of my funeral you will ride in the funeral procession with my mother." Pat wiped his eyes and said, "Biddy this is your dying wish and sure enough I will do it but I want you to know that it will spoil the whole day for me."

But we have selected a number of men who are going to speak to you this evening and I am sure this evening is not going to be spoiled for you. We have reached a period in history when dairying demands more attention than ever before. I am confident that for a period of ten years which we are facing is going to present to you more problems, to you as dairymen, than has ever before gone through in this country and we will all be called upon to help in the great work.

We are feeling mighty proud in Waterloo this evening and all the dairymen in the state of Iowa should feel proud this evening. Some eight or nine years ago, the Draiy Show was conceived. We started out with merely a little demonstration and I see many faces here this evening that were present at Cedar Rapids when for the first time dairy cattle were connected in any way with the present form of the Iowa State Dairy Association. The next year the State Dairy Association held its show in Waterloo and there is this thought that every member should carry with him this evening—that regardless of how large the Dairy Cattle Congress ever grows, how important a factor it ever becomes in the State, in the Mississippi Valley, in the United States, in fact, in the world if you please, it was the State Dairy Association of Iowa that organized it, started it, put it on its feet and gave the opportunities for a Dairy Show in the Mississippi Valley. This institution has grown steadily year after year until today I am confident that the biggest day in the history of the Dairy Cattle Congress is finished. I think there has never been a day when there was such an extremely large attendance as today and there is one thing more that I would wish to call your attention to in this connection. There has been a motto well defined and we have adhered to this as closely as possible. Regardless of the fact that it has meant a sacrifice of gate receipts, the Dairy Cattle Congress has always been for the farmer and dairyman and their allied interests. Never has the thought been uppermost of any Director of the Dairy Cattle Congress that we should strive for more gate receipts regardless of the class of people entertained and I am firmly of the belief that the real result of the Dairy Cattle Congress accomplished has been namely the betterment of dairying.

Unless they choose the people who visit the show whenever any institution of this kind organizes for the purpose of advancing dairying and for making certain permanent agriculture, overlooks the one vital point that the Dairy Show is for the purpose of serving men who milk cows and serving men who serve men who serve cows than that institution is undoubtedly short lived. It means that the dairymen must get behind the institution themselves and it means the institution that is going to succeed will serve the purpose for which it is organized. On this subject, I wish to leave this one thought with you that the advancement of dairying should be greater than ever before at this particular time; that dairymen, buttermakers, the men who milk the cows, the men who serve this class of people are gentlemen of the greatest industry in the world. The agricultural class, which President Munn will tell you represents a wealth of $8,000,-000,000.00—that industry is great enough—that industry is wealthy enough—that industry is made up of men who are progressive enough—men who are sufficiently interested in the industry of which they are a part of so that they themselves should make their organizations, their institutions, if you please, whether they be a State Dairy Association, a National Dairy Council, a State Dairy Show or a National Dairy Show, the absolute success that it should be and I believe if there is any one thing that we have accomplished with the State Dairy Council with the Dairy Cattle Congress over and above all other factors it is that the buttermakers, the men who milk cows, the manufacturers of dairy equipment, in fact everyone connected directly and indirectly in the dairy industry, have lent their efforts for the progress and development which has come about.

In introducing the next speaker, I would say this that there came a time after the Dairy Cattle Congress had been organized and established when it became important to us as to whether or not such an institution with such large possibilities before it, should be shouldered by the dairy men who are busy and who cannot often get away. It was at that time the decision of the Iowa State Dairy Association that perhaps it would be better to let somebody else carry the responsibilities of the Dairy Cattle Congress. At that time the Dairy Show was sold to the city of Waterloo and since that time the city of Waterloo has done its share towards financing the show and making necessary improvements. The Dairy Cattle Congress has connected with it a Board of Directors composed of the leading citizens of Waterloo. The President, is a man who at one time was postmaster and since that time has been the Mayor of this city. By that you will know that he knows more about law than about cows. Nevertheless he has been so vitally interested in the Dairy Cattle Congress, we have now made him President. It gives me great pleasure to introduce to you Mr. W. R. Law, President of the Dairy Cattle Congress of Waterloo—Mr. Law.

PRESIDENT W. R. LAW.

Mr. Toastmaster, Ladies and Gentlemen:-

Were I to tell you all that I know about myself, I would have some doubt as to why I am interested in the Dairy cattle business or even been called upon tonight. My regular business is trying to eke out a living by practicing law and if any one here or in the world can associate a lawyer with the business of raising cattle, he is entitled to first prize, grand champion class.

This reminds me of a story of an old Judge who was very slow to see a joke. One day a friend said to him, "Did you know they weren't going to make postal cards any longer?" "Why no, why is that," said the Judge. His friend replied "Because they are long enough." The Judge then decided to spring the same joke on the next gentlemen that he met. He finally met a victim and said, "Did you know they weren't going to make postal cards any more?" "Why no, why is that?" The Judge hesitated a moment, thought, and replied "Damned if I know." And damned if I know why I am here tonight. Perhaps the reason is similar to the reason which they tell about the colored boy who arrived at Camp Dodge. When they commenced checking up they could find no record of this man and when asked what he was doing there he replied, "I dunno, I just came on dis here train that jus got in." "Well, how did you get on that train?" "I was down to the depot when the sheriff said, 'Get on there you dirty dog' and I got on the train." And that is my case, I was told to be here so here I am.

I must say that I am somewhat embarrassed. Mr. Van Pelt whom I know and you know came to me and asked what I was going to say tonight and I told him in all faith and then he gets up and delivers my speech. Not that I would have you believe for a minute that I intended to say the very same words for undoubtedly he worked the same stunt on everybody and worked up his speech.

I am here from the standpoint of a representative of the Dairy Cattle Congress, the instiution which has as Mr. Van Pelt related is now holding its ninth annual show. I am not going to tell the whole history of this show since it has been taken a hold of by the city of Waterloo. But we must give full credit in the formation of the idea of this show and I can't do better than to quote Mr. Van Pelt's words that no matter how large this show grows, the fact is not going to be forgotten that the Iowa Sate Dairy Association started it and lent its efforts to this show which is growing so rapidly.

The people of Waterloo have a show that they are proud of and it is no more nor no less than a trend of human nature, that when we have something that we are proud of, it is a real pleasure to show it to others throughout the states. Waterloo is an exceptional place. No matter what the organization may be, my experience has been that the people of Waterloo are always glad to boost the proposition and proud to show what they have done to others and that same spirit of pride and pleasure is displayed in the Dairy Cattle Congress. At first the local people failed to appreciate just what it was but soon came into the realization of it more and more until they came to understand its possibilities and not misunderstanding the fact the business interests of the city got behind this proposition until at the present time we are the owners of our property and owners of our buildings. One year ago, we were out of debt but on our Board of Directors we had some of the best little borrowers and we borrowed some more money to build the automobile building and this year borrowed some more with which to build the ampitheatre. But we have felt that no institution could stand still, it must either move forward or backward and we believed, knowing as we did or come to know, this association and the people who came here and with faith in their efforts, we believed that this show would become one of the greatest if not the greatest Dairy Cattle Congress or show, we don't say in the United States but the North American continent and if it is possible to make it so, we are going to make it so and I am mighty pleased to say, we feel repaid today, because as Mr. Van Pelt has said today shows the greatest attendance at this show that we have ever had in nine years. The people of Waterloo have come to like us gentlemen. Those who have taken a great interest in this exposition not because of personal fancy have found their reward.

There isn't a shadow of a doubt that encouraging the business of making dairy production more efficient, if by intensive methods of creating and disposing it if you please, is one of the greatest problems of the world today. And we know that next to water, milk is the most necessary thing in the world to sustain life. When you stop to think that it is the only food for babies and invalids and so necessary to all physically and mentally, this industry must be protected.

The people of this community realize this and are becoming more and more interested in this show which stands for this industry and they are always glad to help it and at the present time, they have invested approximately $60,000.00 and with the great possibilities for the future, we hope to continue until as I have said before, this association will become the greatest thing of its kind on this whole American continent. I am mighty glad to be here tonight and as Professor Van Pelt delivered my speech, I trust these few remarks will suffice for it. I thank you.

MR. M. D. MUNN

President of the National Dairy Council.

It is impossible for me to be both serious and humorous on the same occasion. I might say with the utmost candor and truthfulness, it is almost impossible for me to be either on any occasion but I have some serious thoughts or truths that are serious to me in relation to this industry and I am going to ask he priviledge of consuming a little more time than men called on in a case of this kind should consume.

We are thinking today in world thoughts. We come nearer having a world vision today than we ever have before. Ideals are growing, individual right is asserting itself against autocratic selfishness and autocracy and the time has come for the dairy industry to take on a larger vision realizing the important relations to our nation and realizing its importance to everyone engaged in it.

The Mayor of this city spoke of the fact that we are now in the midst of the Mississippi Valley, the greatest Valley in the world, barring none, extending from the Canadian border on the North to the Gulf of Mexico, resting its Western side at the foot of the Rocky Mountains and its Eastern side on the sloping Western side of the Allegheny Mountains; a valley, in fact, more blessed with climate than any other spot in the world, a valley in which there are 15,000 miles of navigable rivers, in the soil of which there is about seventy per cent of the entire mineral products of resources of this country and a very large per cent of the world; a valley in which grew or was produced last year seventy two per cent of the total food consumed in this country and a good share of that supplied to those living on the other side with whom we are now allied.

Why should we take a world vision of this industry? I wish to sketch very briefly just what this industry we are in means to the world. We have in the United States today in round number 23,000,000 head of dairy cows. Do you realize that that is almost as many dairy cows as there are in England, France, Italy, Serbia, Belgium and Holland? We are the greatest dairy nation in the world, the greatest dairy nation the world has ever known and yet we don't realize it. There has been a decrease in the productive power of the dairy industry of those various countries I have just named ranging from twenty to seventy eight per cent according to the best figures available. I don't mean by that, that there have been that many dairy cattle disposed of or lost, but loss because of the decrease of power is represented by those figures. Today England is on a ration of two ounces of butter per week. Think of it! Canada has just begun on the ration of two pounds per month and the Government has taken over the entire output of the dairy industry commencing the 30th of September. There is this fact, without dairy products and milk, it is impossible to raise children and it is also impossible without dairy products to have physically and mentally efficient men and women because without the vital element contained in the milk or butterfat, we cannot only raise children but we can't have efficient men and women.

I think that the splendid, continuous, marvelous courage of the boys who have gone from this country over there, in the past sixty or ninety days have done what they have in the advance, is due to the fact that they are boys of a nation where milk and dairy products are used freely. Therefore, I say that it is well for us to view this great industry with a world vision such as we have never done before.

Now coming back to you on conditions in the countries above named. In France today it is impossible for a glass of milk to be had for an adult and in Belgium it is absolutely impossible. In Italy, milk is to be saved for the children and in England has been able only to retain for itself milk and dairy products sufficient for its children. I will not refer to figures which shows such horrible conditions so far as child welfare and life is concerned in those countries outside of England. They are available.

Coming to conditions here in our country where we have 23,000,000 dairy cows, we produced last year, according to the best available figures, in round numbers, 90,000,000,000 pounds of milk in this country or to reduce this to more understandable form about 45,000,000,000 quarts of milk, not enough milk that every man, woman and child in this country should have for healthful purposes. Not a quarter enough to have gone around. Of this volume of milk we are using 42 per cent of it in the making of butter and about the same amount is used as whole milk. That is, consumed as fluid milk, leaving a rather small percentage of cheese, condensed milk, butter and ice cream.

We are confronted now with two radical dangers in this industry and when I say radical, I express it rather mildly. One is that owing to the extreme demand in the foreign countries for this product, we will not be able to supply it even by going so far as to decrease consumption in this country and the other is that labor and feed conditions have brought upon us, by reason of our effort to stand by the idealisms of our forefathers and see that they are not destroyed. We must protect the production in this country. We have two very serious obligations on us today. One which lies in our power is to see that the requested amount of these products are avaliable, not ordinarily for our own use but for people around us so children may survive and take the places of the men who are now giving their lives. We owe it to ourselves in this country to see also that this industry prospers, that it grows and grows, that we may have, as we are going to be called upon most certainly as the war progress, that we may have these products in order that we may replace the lost man power and woman power that is going to result from this war in this country, that we may have men and women in the future to sustain this great nation that is going to be the greatest nation protecting and conserving human lives and liberties the world has ever known. That this may be done, we must have these products from the dairy cow in order that we may have the young men to accomplish these things.

When we look at this aspect of this industry, is it at all surprising that men have become serious, is it at all surprising that we have gatherings of this kind and right here I want to congratulate the people of the state of Iowa, especially those engaged in the dairy industry, the people of the city of Waterloo and those who are conserving and directing this great dairy exposition now going on here, because you are engaged in a splendid work. I am proud to say that I live in a state that borders on Iowa. I don't know as I can pay a greater tribute to the state than that. Iowa is a marvelous state, a marvelous state. The possibilities of your agriculture, the possibilities of your industries cannot be pictured in words, nor can they be measured in thought. I wish I could give you in concise form the marvelous possibilities of the resources which lie in dairying in your state. I am not sure but I might safely say in the most respects the state of Iowa is a state which possesses perhaps the greatest possibilities so far a dairying and agriculture are concerned of any state in the Union. That is, because of what you possess in your soil to begin with and the supply of water. In fact, you are not quite so far north as we are in Minnesota and not far enough south to get the disadvantages of extreme heat and drouth.

With these possibilities in Iowa, I am just going to make an appeal to this industry to join with the other states in doing something which I am going to outline tonight in connection with this industry. As your Toastmaster said, I just came back from Washington where I was called by Mr. Hoover for a conference in connection with the dairy industry. He is greatly concerned about the supply of dairy products not only for this country but demands upon him and his associates from the allied countries. He told us many figures which stirred me, which he had gathered through the department of agriculture, regarding the past and present conditions of this industry in this country, its products, what it had on hand and I was dumfounded to find how close we are to a ration of dairy products. Now I don't want to be an alarmist, I don't think we are ever going to reach that point but I was dumfounded to find how close we are, in fact, to it, as you are well aware they commandeered 60% of the butter in storage on the 27th day of August last. Mr. Hoover said they expected to get approximately 60,000,000 pounds of butter. In reality they are going to get about 25,000,000 pounds. This request on that branch of the industry was made necessary because the request had come from the boys on the other side that they must have so much butter to use. Although the figures available show 100,000,000 pounds of butter in storage according to the last figures gotten out by the Department of marketing, we have consumed between the time those figures were compiled and the time the commandeer was made the amount which shows how these products have been consumed and how much they are in demand and I refer to this only to explain the statement made some time ago that I was dumfounded how near the point of a ration we were.

These conditions we discussed there at great length, what could be done and what should be done to conserve this industry and to protect ourselves and our allies against this decrease. I said a moment ago that there was a radical danger of this shortage. I meant by that that if the shortage becomes so acute either because of an under production or an over demand for exportation that the price might go so high that it would be dangerous to this industry. Now since all of us look at this in a big way, let us strip from our eyes, strip from our minds, discard all thought of littleness in connection with it. This is no time for narrow minded men but for broad visioned, thoughtful men.

To set a maximum price for these products of this industry to the consumer is an idea prompted by narrow minded men. Why men, let us understand what is being done before we criticize, let us understand what is necessary before we act and then act with a broad vision necessary to make this industry what it ought to be. Mr. Hoover said that we must do something to conserve and help this industry, to protect ourselves and allies against danger. What can we do? After a period of lengthy consideration and discussion, a very frank statement by Mr. Hoover, he propounded some questions for us to consider. He recited these conditions and then he said, "Is it detrimental to this industry to have these prices go so high that it will curtail too much the consumption? What will be the effect if substitutes are used on account of these curtailments? Is it advisable for the Government through the power invested in the Food Administration and combined interests to fix a minimum price to establish this industry?" We all agreed, there were some fifty men there, some from our own part of the country and we agreed it was in danger.

As I first said, it would be dangerous for that industry if a maximum price were to be fixed, by reason of these high prices, substitutes would be used for dairy products. The fact is, that once the substitute, and I refer to the margarines, once they get in and are being consumed by people who do not know the danger from their use in the place of butter, they are apt to remain and a great danger will result. That consumption of the substitute undermines the vitality both mentally and physically of the men and women of this nation. It is easy to appeal to oneself, to say by buying something which you are led to believe is just as good as butter and use it because it doesn't cost as much as butter, when you are ignorant of the fact that butter has that element in it which your system must have and the substitute has it not. Therefore, I say that it is dangerous to have these substitutes come in and take the place of dairy products in our systems.

Then the next question was, "Is it wise for the Food Administration or Government through its combined power vested in it to establish this industry by fixing a minimum price at which the Government will purchase all these pooducts and either export or store them pending a time so dangerous to this industry as under production or over consumption. Under production coupled with over demand puts the dairy industry on one hand in a dangerous position. We saw the danger unless the dairy industry can go on and produce subjected to ourselves and the danger that I have referred to and we therefore said we believed it would be a wise thing for the Government during the war to use its combined power to establish this industry at a minimum price. The Food Administration has no more power to fix a maximum price than if it were our power. The Food Administration is vested with authority to purchase supplies necessary for our boys and to purchase supplies for our Allies on the other side. It can establish this industry by fixing a minimum price. A committee was appointed to determine what would be a fair price at which to fix this minimum price—fair to the industry and fair to the consuming public; that is, fix a price at which the industry can afford to produce the product not for the purpose of profiteering but to produce at a cost plus the minimum profit on the one side under which the industry can live and on the other to encourage the consuming public to take it at that price. I may be wrong in my viewpoint but I have just got to feeling men, so far as this industry is concerned, that I don't want to see a single man on a farm anywhere obliged to produce that product at any loss. I want to see him get cost and what is fair beyond it, but personally I have just got to feeling that so far as I am concerned, if I can go through this crisis and save my cows and save my farm and come out intact and uninjured by loss, I am not going to complain very much. Now I am just advancing my own idea about that, but I want you to understand this industry ought to have and must have cost for the productions of these products. It is difficult to determine what that cost is. It ought to have a fair profit for the laborer. There is no more reason why the farmer should be asked to sacrifice any profit than anybody else and I have yet to see the farmer anywhere in this country where I have found any great expression against that proposition. They are more willing to sacrifice than any body of men I have come in contact with and you can't blame them for not sacrificing beyond their means.

This industry is supported by 6,000,000 units in round numbers, scattered all over the mountain sides and the hillsides, the valleys and the plains of this nation. The morning sun's face finds the family awake and at work, but we think the sun finds them in most cases starting at work back there in those homes. Back there in those homes in 1776 was born the idealisms for which we are fighting today, back there was born by the fireside where the Bible was read at night and prayers were said, there was born the patriotism that made this nation possible and in the Civil War was born the love of God, the love of a nation that made it possible for us today to be the power we are in the world and back there in that home was born again the idea of sacrifice, the love of liberty, the protection of individual right as against autocracy and autocratic encroachments that made it possible for us to go in and win this war as win it we will. I say those homes and this love of liberty, to sacrifice today as much as we can give for liberty, individual rights, human happiness to remember the birthplace from which it arose. For that reason we must so organize ourselves, we must so conserve this industry which is absolutely the mainstay of those 6,000,000 units in the long run so that they can continue.

How will it be done? We have the National Dairy Council, an organization which is in its infancy yet. It can't be done through one body. The man most interested in this industry is the man back there who owns the cows on the farm, it is his product that we are talking about, the cows he owns the only source of that product and ninety per cent of that product comes from farms where dairy cattle are in fact a secondary consideration. I mean by ninety per cent of the portion of that product that butter is about eighty per cent of all the milk produced on those farms where dairy cattle are secondary in only one sense but not secondary in any other sense. How can we organize these 6,000,000 units? Careful thought has been given to it and a plan involved which is in a forming betterment way. We started to organize the State Dairy Councils so that we can get back as near as possible to the man who owns those cows and get him engaged in helping the development of this industry and create the market in which the product is sold or protect the market in which the product is sold through these dairy councils. We hope to build that 6,000,000 units into one national co-ordinated organization and in time we hope that the men who own these cows will come to realize that they are engaged in an industry greater than any other. It is a mighty side harder to be a good farmer than to be a banker; it is a mighty side harder to produce successfully and businesslike from your land and your cows than it is to loan somebody else's money to somebody else and not get a loss on it and we hope to have these men come to realize that they are engaged in an industry which is second to none in its vital relations to human life and welfare.

This industry produced last year twenty per cent of the food we ate. The food we eat comes from two sources, from the land and from the water. Ninety-two per cent of what we eat comes very directly and indirectly from the soil and dairy products come indirectly from the soil. This is so much like a machine, the dairy cow takes what she eats from that which grows in the soil, puts it into the stomach and drops in the pail the great source of life and growth. What she ejects goes back into the soil to help place more food and thus have the same process over and over. It is a marvelous machine, a machine the form of which we ought to regard and understand to the utmost. Instead of being twenty per cent it should be thirty-three per cent and it can be made thirty-three per cent. We told Mr. Hoover and I know it was the truth, if we could only get the men to realize the facts, in thirty days we could increase ten per cent. Some of the men said this was too low, it could be increased twenty rather than ten, that ten per cent was very conservative.

In this strategic period when we have perhaps the lives of hundreds of thousands of children on the other side at stake, isn't it worth doing? I hope to see in the next thirty days such a growth in this industry that men will say I will produce by feeding these cows the necessary food to increase the production and I hope to see the Government say that while doing that we will see that your effort is not rewarded by loss. We will take every precaution necessary and pay you the price of cost, plus a fair profit so you may go on with the assurance that you will not lose from a stringent condition. We are working on so many things that can be done and ought to be done here in connection with this work. It staggers one when you think about it.

I do not want to speak too long and encroach too much on the time of the other speakers but there are two or three other things I realize when talking both to business men and dairymen. As I said a while ago, I want to repeat, this is not time for narrowminded ideas or efforts, narrow-minded selfishness. This is a time, men, for big thoughts, big ideas. I wish we could strip from this industry those men so narrowminded that because they see an effort being made they fight it just because it is an effort and don't stop to think or realize the benefit they may make by joining in it. I hope that this industry will be so crowded that a man who has these narrow ideas will feel so lonesome, so darned lonesome when he sits down with a crowd of men that he can't go home without changing his viewpoint.

There are fourteen organized dairy states counting New England as one and those five states if I may be permitted to say so, are just one fair-sized state, western state, and fourteen states are making up most of this industry. We hope to get those states all organized—ten are already with State Dairy Councils and three more coming in in the next twenty days. In thirty days, I hope all of them will be in and will be organized with Dairy Councils. Then one splendid gathering when we all get together and perfect this organization, what the advantage to this industry is going to be I can't picture to you in words and when that is done that will be the time when the man just referred to will feel lonesome.

That isn't all we have got to do. We have three things to do. We must build not for today, or at once, but we must build for generations to come, we must so organize that when you who are now at the present time engaged in this industry step out, it will be so complete to those who step in without knowing the change has taken place. It is just as possible in this industry as in any other industry and it is going to be done because it is right, because the welfare of many thousands is behind it and because the best interests of this industry require it.

I wish that everyone would reach the point where he would feel that because he is engaged in one branch of this industry, that his position isn't necessarily without competition to another engaged in another branch over here. I mean by that every manufacturing department of this industry, whether on the co-operative basis, on the individual basis or on the centralized basis, should see this industry in the world light and so work together that neither will try to destroy the other but each to help the other. Then when you have co-operated or co-ordinated into that effort, the effort of the man on whose shoulder this industry is, the man who is selling his dairy machinery, and who manufactures the dairy machinery, the man back on the farm all get together we will put this industry where it belongs.

The man who owns cows should be working to contribute an amount to help build the man who takes the products, manufactures butter, cheese, ice cream, condensed milk, etc.; should be willing to pay his fair portion to help build this industry. The man who sells machinery should be willing to do it and the man who manufactures should be willing to do it. When you get a gasis of contributions as nearly equal as may be, the one contribution from all branches of the industry, an ideal condition will result. That time is coming and when it does there is no small minded man big enough, no narrowminded ideals powerful enough to even check that progress. It is going to come.

And now I know there will come from the state of Iowa a voice approving this effort and a determined growth in the effort to join in and do its share towards it and when the proper time comes, Iowa, I know, will not be found wanting in that respect.

I want to thank you for your very kind and courteous attention and apologize for the time I have consumed.

DEAN C. F. CURTISS

Iowa State College, Ames, Iowa.

Mr. Toastmaster, Ladies and Gentlemen:

A friend of mine who has something to do with a Speakers' Bureau told me recently, nearly all requests that he had for speakers were for men that had been gassed or wounded. Unfortunately, I can't put myself in either of these classes tonight and when I am called upon to follow two such distinguished lawyers who have spoken tonight, I am put in a very difficult position. References have been made to some of the difficulties lawyers have in these times. This reminds me of the story of the lawyer in Iowa who wished to emigrate to Texas and wrote to a friend of his who lived in Texas and asked about the possibilities and what he thought of the chances for an honest lawyer. In replying his friend wrote back, that conditions were very good and he urged him to come on as he felt certain that an honest lawyer would have no competition.

When our toastmaster first addressed this audience, the various organizations represented here, he made some reference to the allied interests. I thought he was going to say allied armies and I think indeed, he might have referred to it as allied armies and I am proud to refer in any connections to the allied armies of this kind and what they have done for the advancement of a great industry like the dairy industry of this country in all of its branches and I wish to congratulate men engaged in this industry. I believe this organization with its various lines of interest and effort that it has to do with dairying is one of the wisest and one of the best conceived plans that any industry has ever undertaken and in this connection I am reminded of what the last speaker said concerning the importance of protecting an industry which means so much to the welfare of our people and ourselves, and which requires so much important effort on the part of the individual .

A few years ago when Mr. Armour was showing his famous six horse team in this country and after they had won all the honors that could be won, he conceived it a good idea to send the team abroad and exhibit at the great Palace show in London and when they arrived there and made their first exhibition very great interest was shown in them, so much so that it was a matter of common talk, not entirely on account of the excellency of the horses but largely on account of the wonderful manner in which the horses were handled by the driver and King Edward then on the throne made a special request to see the driver. He came down, spoke to Wells and complimented him on the way he handled the team. Mr. Wells related this with a great deal of personal pride. Mr. Armour upon hearing of it said, "Wells, wasn't that a good deal of attention for an ordinary man to receive from King Edward?" Wells replied, "Yes, but I am no ordinary man."

This is somewhat the position of the farmer today. A few years ago, we made a survey of the farms in one of the townships in Iowa and found the average capital invested $37,500. We then made a survey of a township just outside of your city, one of the most magnificent in this or any other state in its rural citizenship, in production and improvements and where everything stands for the highest type of rural citizenship and the average was $50,000.00. Now gentlemen, when you find a business with such a large capital at stake, it is indeed a business that is of great importance and one that we may well keep in mind in a time like this. This business is one that is of vital importance and be it said to the credit of agriculture that it is the only great industry of this country that has met every demand that the Government has made of it and delivered the goods absolutely on time. The farmer is on the job and he is particular and as Judge Munn has said, he is ready to make any reasonable sacrifice or reasonable demand and is meeting these demands under extreme difficulties. How great they may be in the years to come, no one knows but those demands are increasing. We need this industry to back our boys over there—the army needs no man over there now who is unable of doing the business when he gets there.

In Washington recently the Committee on Public Information made the statement that the efficiency of the labor in our munition factories had decreased forty per cent since the beginning of the war. In a statement not long ago, Lloyd George said that in all of England there is not a single piece of machinery in operation now that there was when the war broke out. It has all been replaced by something larger and more efficient. This labor efficiency should be the same on the farm and the man who is not keeping up with this progress is not doing his duty. We need to adopt the same methods and means to increase this production and this movement that is now under consideration is of great benefit along that line. We have even witnessed such things as this—that in a few instances that land not properly handled and efficiently managed and so operated has been taken out of the hands of that man and put into the hands of a more efficient man both in our own country and in foreign countries and I am not sure that the time will come in times of peace where a man will not be permitted to operate a farm or productive piece of property unless he is able to do it with a fair degree of efficiency. It is interesting and strange in a way that it has taken a great world wide war to firmly establish some of these things.

We are coming to know that it is impossible to maintain human life, to attain the highest welfare, or highest efficiency without a liberal supply of dairy products. This fact is going to be established and impressed upon the minds of the people in this country to a greater degree than ever before through the lessons of this world war. It will rebound to the benefit of our great industry and benefit this industry in which we are all interested.

The last speaker discussed fully the things we need to consider very carefully, and I firmly believe that the Government should lend its efforts to encourage and establish these industries. One of the first things sought into when this country became involved in war were various prices of food. Some mistakes have been made but we must not lose sight of this, that no great industry can stand depressing prices. That was in the minds of a number of people in the outset. Some of the people complained about the cost of food prices and said that the output should be increased and prices maintained on a low level. This is absolute fallacy, no greater fallacy has ever been promulgated, and therefore, the food administration and dairy councils should fix a price that will help operate the output to the best interests of the dairy industry and fix a minimum price, not a maximum price so that those interested in this great industry may operae at a fair price—cost plus a fair profit. If a maximum price as well as a minimum were to be established it would have a depressing effect.

You can fully appreciate the difficulty of fixing such a price when you enter into the fact that the cost of the production is changing so rapidly—that a price fixed on a fair basis today is not at all adequate a few months hence. And after this war, the dairy farm and dairy products will be in greater demand and of greater importance than ever before and it behooves us to stand unified at a time like this, joined with an organization such as represented here in the National Dairy Council and State organizations and determine to render every service that can be rendered. General Pershing went to the Statue of Lafayette and said, "We are here Lafayette," and we ought to catch that spirit here throughout this land and everyone say in our place "Lafayette we are here" and with that spirit behind us to discharge our full duty and render the highest service we can to the state and the allied armies in pushing this war to a successful conclusion.

W. B. BARNEY.

Mr. President, Mr. Toastmaster, Ladies and Gentlemen:

I want to say that it is quite gratifying for me to be here tonight and I desire to say to begin with that it is gratifying because this is the first result of a combination of the State Dairy Association and the State Dairy Council. We organized a Dairy Council in Des Moines about four or five months ago and I had the honor of being president of the Des Moines Council.

Now this question was asked. What effect would the State Dairy Council have on the Iowa State Dairy Association? My answer was this—that it would probably have about the same effect on the State Dairy Association as the State Buttermakers' Association had had on the State Dairy Association. It was thought at the time the buttermakers were organized here in the state that it might lessen the influence and the activities of the State Dairy Association but I don't think that it has. I want to say that when the states have organized—and I am glad that Colonel Munn is with us and explained to us what he expects to do in the National Dairy Council. I want to say that the labor organizations have shown what they can do in the condition of the laboring man and an organization of this kind can do the same for the dairyman and farmer. The dairyman or farmer knows very little about an eight-hour day. He is thinking about how he may crowd two eight-hour days into one or about sixteen hours. Now if they were organized, they would have some way of speaking and getting to the lawmakers of our country and would get their share in all that we are entitled to and I think this is just where the dairymen have been lame.

Now I am glad that there are so many loyal people here tonight, so many loyal to the dairy interests and in speaking of loyalty I am reminded of the Irishman who went over to the old country and after reaching there soon made up his mind that he had made a mistake and had better stayed in America. He decided to return and after several days sailing on the ocean as they sailed into the harbor the Irishman and several others were on deck. As they came into sight of the statue of Liberty, the Irishman looked up and said, "Now you better take a good look, for you will have to turn around if you ever see me again."

And now we must support the State Dairy Council and the National Dairy Council and I believe and feel certain that this advertising campaign will be to the benefit of everybody. I recall the fact that in our meetings at Des Moines recently one of the dairymen got up and said that their profits were so small and so little profit in the business that we could not afford to advertise. I want to say that if there is any man in business at this time that his profits are so small that he can't afford to advertise, he better get out because he will have to if he don't advertise. I believe that this is the time when we will be obliged to do a lot of advertising. You know very well that people that are making these substitutes are strong competition—they are strong competitors because they are going to advertise. They don't always do justice to everybody in getting up their advertisements and I don't think always fair and if I may be permitted to speak of my personal doing with this I would just like to say that one of the manufacturers of oleomargarine some few years ago, I think about seven or eight years ago, used a cut of a cow that I had shown all over the country at the Central and Western State Fairs. He took a photograph of a cow that had won numerous premiums fixed it up in a composite picture, putting her right in the front line in his barnyard and under the picture said this is Mr. Jelke's herd of Holsteins that produced the product out of which Jelke's oleomargarine is churned. At this time, he is under a state prison sentence and at that he is just as fair as a lot of the others that haven't been sentenced.

Just what we are up against in this work you can see. You know there is a good deal of talk about conservation at this time and looking over a letter I had the other day, this thing came to me and I am going to give you just a little from this. This is with relation to the amount of human food from 100 pounds—Cows milk, 18 pounds of eatable solids. Hog, dressed, 16.6 pounds of eatable solids; the pig is next to the milk of the cow. The calf, dressed, 8.1 pounds. Poultry, that is, eggs, 5.1 pounds. Poultry dressed, 4.2 pounds of eatable solids. Now these are eatable solids per 100 pounds of material consumed. Out of one hundred pounds of matter consumed lamb, 3.2 pounds; steer, dressed, 2.8 pounds; sheep, dressed, 2.6 pounds. Now just think of the comparison, eighteen pounds of eatable solids produces from 100 pounds of milk and down as low as sheep which is the lowest, 2.6 pounds. Now isn't it well to remember at a time like this when we are trying to save that the dairy cow helps us more in that direction than any other of these animals? It seems to me that it is a good thing to remember that milk will produce 18 pounds of eatable solids in 100 pounds of matter consumed.

I was at a meeting in this room last night at which President Aiken of the Holstein-Friesian Association delivered an address and he said that Iowa stood third among the dairy states and he said "Gentlemen, what apology have you to offer for not being first. You should be ashamed at not being first when land produces here in Iowa of the sixteen most important crops just about three times as much as any of your neighboring states and more than double of what my state produces." It seems to me that as our lands get more valuable and I believe that the time is near at hand when good corn land will be $500.00 an acre, that the dairy cow will more than ever come into her own and we are going to be more careful than ever as to how we use our feed. It won't be long until practically every man in the state of Iowa will realize this. I am glad to say that this year there have been more silos built in the state of Iowa than any other year. The time is coming when the silos will be just as numerous on Iowa farms as are corn cribs.

I wish to say just a word about the State Dairy Council and then I will close and we are going to sell the butter here tonight and I know you will all want to hear the auctioneer. Just this afternoon he sold a quilt for $1200.00—now that was either some auctioneer or some quilt.

Now Mr. Munn didn't say to you I think that we have an Iowa Dairy Council here. We have the honor of having the first one organized in the states and we are going to get busy and we are going to ask the help of everyone in this state and we are going to work for the good man that sits under the cow and do everything possible to put Iowa the first state in the Union so that when Messrs. Munn and Aiken come back we won't have to apologize—we will be the first state in the Union. I thank you very much gentlemen.

H. G. Van Pelt:

It is my understanding that as a result of the dairy convention being held here this week, that resolutions committee has prepared some resolutions which Mr. Wentworth will present at this time.

REPORT OF RESOLUTIONS COMMITTEE.

Your committee wishes to submit the following resolutions:

Whereas, The city of Waterloo and Dairy Cattle Congress so effectively co-operated in the success of the meetings of the Iowa State Dairy Association, be it resolved that the appreciation of the Association be extended to them.

Whereas, The officers of the association so proficiently performed their duties, be it resolved that our thanks be tendered them.

Whereas, The efforts of the Iowa State College and the Iowa State Dairy and Food Commission have co-ordinated and prompted the dairy industry of the state, be it resolved that we commend them.

Whereas, The dairy industry of the state to such a great extent has been increased, be it resolved that we demand recognition of this fact by the Iowa State Agricultural society and that they provide a building at the Iowa State Fair commensurate with this.

Whereas, Be it resolved, that we request the legislature for laws protecting the dairy industry particularly regarding tuberculosis.

Whereas, in this state there is under organization the Iowa Dairy Council, throughout the United States the National Dairy Council whose purpose is to protect this industry, be it resolved that we endorse their actions and place our organization at their disposal for such services as we may be able to render and

Whereas, our nation and allies now engaged in the world war to protect us, be it unanimously resolved that we individually and as members of the Iowa State Dairy Association be found ready every minute to bring about victory.

Respectfully submitted by the Committee on Resolutions,

W. B. Barney,
A. W. Wentworth,
G. H. Telliar.

VIEW ON GRAND AVENUE AT THE IOWA STATE FAIR.

PART VII

Excerpts from the Proceedings of the Fifteenth Annual Meeting of the Corn Belt Meat Producers' Association Held in Des Moines January 28-29, 1919

ADDRESS OF PRESIDENT SYKES.

The year 1918 has been a most busy and anxious one on the part of all our people. Never in the life of our nation have the American people overcome such difficulties, accomplished such gigantic tasks and written such sublime history, as during the past year. And due credit cannot be denied our farmers and stockmen for the important part they have played in the accomplishment of these marvelous and almost superhuman acts, performed by our government, our soldiers and our civilian population.

Among the many great and perplexing problems confronting us as a people, at the time of your last annual convention, was the transportation problem and the feeding of our Allies and our people at home.

Freight transportation conditions east of Chicago had become so congested that on the 19th day of December, 1917, the President deemed it wise to take over by proclamation the entire railroad system of the country, and place it under government control, and appointed Mr. William G. McAdoo Director-General of Railroads.

There is not any doubt but what, under the circumstances, the President acted wisely, and yet this action, in conjunction with the unprecedented storms of the winter, tended to greatly slow up the movement of freight trains, and to finally block almost entirely the movement of grain and live stock to market. During the fore part of January, we watched with a great deal of anxiety and concern these conditions develop, not knowing just what course to pursue, under the new order of things, but the situation grew worse so rapidly that about the 10th of January we started out with the intention of taking up the matter with the operating heads of the different railroads of the state, and if necessary going on to Washington, to try and secure, if possible, some relief. We first visited Boone, and went from there to Des Moines, where Secretary Wallace and I conferred with members of the State Council of Defense with regard to the matter, and also the operating heads of the various railroads. From here we went to Chicago, arriving twelve hours late, in one of the worst blizzards of the winter. Here I at once took up the question of live stock service with J. P. Cotton, chief of the meat division of the Food Administration, who had just returned from Washington; and we then both proceeded to lay the matter before the heads of the various railroad departments, and as a result received the fullest assurance that conditions would be improved at once, and that we would be furnished sufficient equipment to handle our live stock to the Chicago market. As we had received the same assurance from the railroad heads in Iowa, we were inclined to take them at their word, and returned home to watch the improvement and to assist in any way that we could.

It was not necessary to wait long to prove to us that our hope for improvement in the service would not be realized, at that time, as conditions simply grew worse, aggravated and increased by the severe snowstorms, so that by the last of January it was almost impossible to secure cars at any time for loading live stock to Chicago. And traffic had become so demoralized that no shipper would venture a guess when his stock would arrive at the market after it was loaded, as it was taking from three to five days to deliver stock from western Iowa points to Chicago, and a corresponding length of time from points further east.

On account of these deplorable conditions and the low price that then prevailed on fat stock, farmers and feeders everywhere were losing huge sums on their fat stuff, but in justice to government operation and the men placed in charge of the railroads, under government control, I wish to state that the running time of stock trains had been very materially slowed down by the railroad people themselves some time before the President issued his proclamation, taking over the roads. For example: All of the Iowa-Chicago lines had, early in December, put into force a forty-hour schedule on stock trains, from western Iowa points to Chicago, thus necessitating the unloading of all stock for feed and rest at the Mississippi river, thereby entailing a tremendous loss to the feeders and shippers of the country. So that in criticizing government operation, you must bear in mind the fact that all of our woes did not come on account of government control; but we do believe that the situation was greatly intensified on account of the very embarrassing conditions that were produced by the President's action. And yet, in the interest of winning the war, we believe it was the only course to pursue, as under the old system of operation, it would have been practically impossible to remove the congested conditions in the freight traffic east of Chicago.

The latter part of January, a conference was held at Ames with Senator Kenyon, Secretary Wallace and others, and it was decided that I should go to Washington to take up the matter there, just as soon as I could arrange to leave. Accordingly, I left soon after for the seat of government, determined, if possible, to secure some relief, both as to transportation and prices for live stock. And we feel that the results accomplished for the farmers and stockmen, by the work done at that time, and by the work following, by another committee later on, fully justified the efforts made.

In Washington we conferred with every official who had any power either in the making of prices or the operation of the railroads and their control, from the President down. We spent ten days working continuously, with the Railroad Administration, the Food Administration and Congress, urging, insisting and demanding relief for the Iowa stockmen.

We testified at length, on two different occasions, before the agriculture committee of the United States Senate, and urged upon the Food Administration the imperative need of the government buying a higher grade of beef for our armies and our Allies, and also vigorously urged a substantial advance in the price, so that the feeders would at least have some chance to break even. To make a long story short, before leaving Washington, we began to receive some favorable reports from the country, in regard to the prospect of improved conditions. We also felt that the men in authority at Washington realized that heroic efforts must be made to save and protect the live stock industry.

On our way home, we stopped at Chicago and laid the entire transportation matter before Mr. R. H. Aishton, who had been appointed regional director of railroads for the Middle West. He pledged to us his most hearty and cordial support, and assured us that he would do all in his power to improve the conditions at once. Thru our efforts at Washington, and thru Mr. Aishton, at Chicago, we secured the annulment of the slower train schedules and the order requiring all live stock to be unloaded at the Mississippi river, and the reinstatement of the thirty-six-hour train schedules from western Iowa points to Chicago, thus saving to the farmers and feeders many thousands of dollars on this one item alone. We also secured additional train service on different days of the week, so that your stock could be moved more rapidly to market and at the same time were able, during the spring months, to so distribute the shipments as to prevent a glut on the Chicago market on any of the market days. So as a result of all these various efforts, the bulk of the live stock was marketed on an ascending market after the latter part of February.

During the latter part of February, a very important conference of stockmen and farmers was held in Chicago, and was attended by your president and secretary and several members of the board of directors. At this meeting the whole situation was carefully considered and strong resolutions were passed, and a committee, of which your secretary was a member, was sent to Washington to present your claims and to continue to urge upon the different departments the various things which your president had been contending for some time. This committee did splendid work and greatly assisted in bringing about the accomplishment of the things which have been of so great value to all of us.

And I here wish to publicly commend the splendid work done by Mr. Aishton, the regional director of railroads for this section, in his untiring efforts to furnish railroad equipment, to relieve the farmers and stockmen of the very serious conditions that existed, and at the same time to avoid, if possible, the flooding on any one day of the Chicago market, which naturally would result in great loss to the feeders.

Early in the spring of 1918, Mr. McAdoo, Director-General of Railroads, made the announcement that during the month of June sweeping advances in both freight and passenger rates would be made. As these advances seemed so unreasonable, after going over the matter fully, it was decided that Mr. Thorne, your attorney, and your president should take up the matter personally with the administration at Washington, and see if some modification of the proposed advances could not be secured on live stock. So Mr. Thorne and I went to Washington about the 3d of June, and presented our claims for a modification of the order so far as it affected live stock. But I am sorry to say that our petition was denied, and the 25 per cent advance in freight rates went into effect as scheduled.

We have always felt that the unprecedented advances in both freight and passenger rates were unreasonable, unjustified and uncalled for, and could not be defended only as a war measure. We are now doing business under the highest system of rates yet known, and it is difficult to even venture a guess as to when these rates will be reduced, as it now appears that the operating expenses of the roads have so increased that instead of talking about a reduction in rates they are claiming that the rates should be advanced still higher.

The next important matter in which your association participated was the attendance on the part of your president, as a delegate, at a national gathering of various farm organizations held in Washington during the month of August. This meeting lasted for three days, and was addressed by a large number of men of national reputation, and apparently every problem confronting the farmers as a whole was quite fully discussed and covered, during the various sessions. Strong resolutions touching many of the phases of agricultural problems were passed, and a number of committees appointed, to press the claims of the farmers for full recognition before the various committees in Congress, and the heads of the different departments of the government.

While in Washington at this time, I also took up with the heads of different departments a number of problems affecting your interests, such as the farm labor problem, the income and excess profits tax law, as it was being interpreted and applied to farmers; the collection of claims against the various railroads, on account of delayed shipments, and other forms of live stock claims; the thirteen-to-one price arrangement on hogs, and other important matters of much concern to you all. All of these we went over carefully and fully with the men in charge, and I Ibelieve the work done was beneficial to all, and on account of this work a much better understanding of our needs and what we are entitled to was arrived at.

On September 6th and 7th, a hearing was held at Chicago by the Federal Bureau of Markets, on the application of various live stock exchanges and stockyards companies, for increases in yardage and commission charges. Your entire executive committee was in attendance at this hearing, and took the position that unless the exchanges and stockyards companies could show by their books that the advances asked for were fully justified, that they should be denied. No radical position was taken against the advances, but a thoro investigation of the whole matter by the federal government was urged, and also many reforms were suggested. I have been trying to keep in touch with the investigations being conducted by the Bureau of Markets, and so far I am informed no announcement concerning the advances has yet been made by that department. In the meantime, the advance charges are in effect, and you are required to pay them.

We now come to a report of the various conferences and meetings held with the Food Administration and the packers, in attempting to arrive at an understanding of the application of the thirteen-to-one price ratio on hogs, and the prices which should be paid for hogs under this plan on the Chicago market. The first meeting to consider this very important matter was called by Mr. Hoover, to be held at Washington, beginning September 23d. Your president was in attendance at this conference, as were also Professor J. M. Evvard, of Ames, and Mr. C. W. Hunt, of Logan, Iowa. Illinois, Indiana, Pennsylvania, Missouri, Kansas, and other states were also represented at this meeting, which lasted for four days. Several interesting and somewhat exciting sessions were held, in an attempt to arrive at a proper solution of the prbolem which seemed a most difficult one, as your representatives were contending for a simple, straight-out application of the thirteen-to-one price on hogs, both corn and hogs to be priced on the Chicago market.

At the same time Mr. Hoover and other Food Administration officials declared that they could not possibly dispose of pork products at such a high price as these prices would necessitate, and therefore a lower price for live hogs would have to be accepted. Mr. Hoover also held that it never was the intention of the Food Administration to figure the price of both corn and hogs on the Chicago market. And after long and heated discussions over the matter, it was finally agreed that the price of hogs in Chicago for the month of October should be arrived at by figuring the average price of corn at the country station for four months previous to marketing the hogs; and then to multiply this average price per bushel by thirteen, which would fix the price per hundred pounds of live hog at the Chicago market. And in order to get live hogs down to a point where the Food Administration claimed it could dispose of the products, an average daily price of $18.50 for packers' droves was agreed to for the month of October. And the conference adjourned.

After this conference had adjourned, Mr. Hoover called in the packers to agree upon the price that should be paid for the dressed products, and they succeeded in cutting off another fifty cents from the price of live hogs, and the price cutting continued so rapidly that the country soon became panicky, and began to rush their hogs to market in such large numbers that the market became so demoralized that on October 23d and 24th the bulk of the hogs sold at Chicago between 14 and 15 cents per pound.

The rapidly declining prices on hogs and the apparent lack of good faith on the part of the packers to keep their agreement in holding up the price of live hogs, caused Mr. Hoover to call a joint conference of representatives of the swine producers, the packers and the Food Administration, for October 23d, for the purpose of correcting, if possible, the wrong done the swine growers of the country thru the tremendous decline of the market. The Iowa swine growers and feeders were represented by the same men that were in the September conference, and other states had similar representation. The large packing concerns were represented by men high in authority. Upon the meeting being called to order, Mr. Hoover proceeded to deliver a most scathing lecture and rebuke to the packers for their lack of good faith in keeping their agreement in regard to the October price on hogs, and said some things that would not look well in print. And your representatives did not mince words in informing both the Food Administration and the packers what they thought of the treatment that had been accorded to swine producers, both in the application of the principle of the thirteen-to-one ratio price and also in regard to the way the packers apparently had disregarded the October price agreement. Some stormy sessions were held, in which your representatives contended most tenaciously for advancing the price of hogs for November back to the October price of $18. But the packers apparently had come to the meeting with their minds made up that they would not attempt to maintain anything in the form of a price agreement higher than the old $15.50 minimum price of 1917. But they were soon forced from their position by the Iowa representatives and a few others that stood with them, and the fact that a minimum daily average price of $17.50 at Chicago for all hogs, except stags, pigs and throw-outs was adopted, was due largely to the splendid fight made by your representatives at this meeting. Not wishing to appear in any way as of a braggadocia type, I just wish to say to you, seriously and candidly, that had not the Iowa men attended this conference and made the fight which they made for you, that your hogs would have been selling for the last ninety days for a much less price than what they have brought. We were unable to secure for you all that we felt you were entitled to, but you did get, we believe, a great deal more than you would have received had we stayed out of the conference. And as you are aware, the minimum price of $17.50 has been continued by agreement thru the months of December and January.

Referring briefly to the announcement made by the Food Administration on November 3, 1917, to the effect that the Food Administration would do all in its power to see that the farmers received for their pigs farrowed in the spring of 1918 a price per hundred equal to the price of thirteen bushels of the corn fed into them. In regard to this whole matter, I do not wish to enter into any extended discussion, further than to say that in my judgment the Food Administration could have avoided a great deal of embarrassment and very severe criticism if it had only come out frankly and openly, early in the summer, and defined just where and how both the price of corn and hogs would be arrived at, and just what it really meant by a price per hundred pounds of live hog equal to the price of thirteen bushels of corn. This, however, it failed to do, and the farmers were laboring under the impression that the price of both corn and hogs would be figured on the Chicago market. And it is needless to say that this neglect on the part of the Food Administration was responsible for the very serious controversy which developed over the thirteen-to-one ratio price on hogs. And we cannot help but feel that the farmers were made the "goat" in this matter, altho it was not so intended by the Food Administration. However, the mistakes of the past have been largely overcome. The farmers have accepted their losses with a fairly good grace. The thirteen-to-one plan has been abandoned, and we hope that during the balance of the year you may receive remunerative prices for your hogs.

I wish here to give you some information in regard to the live stock claim situation which I have been working on since last July. While in Washington in August, I took up this matter with the Railroad Administration and Senator Cummins. Senator Cummins advised us that in his opinion the liability of the carriers had in no way been changed or diminished on account of government operation and control; and advised bringing suit on a number of these claims at the same time, and testing them out in the courts, as he felt sure the courts would sustain the claims as they have in the past.

At the Railroad Administration we were informed that a special claims department had been established, and J. H. Howard appointed chief of that department. So we proceeded to take up the matter with Mr. Howard, and was informed that he was just organizing his department, and that he was going to appoint a committee consisting of six claim agents of the railroads and six representatives of the live stock interests, to sit together and work out a set of rules as nearly uniform as possible for the submission and payment of these claims. I have had the matter up with Mr. Howard both thru correspondence and by personal calls at different times since the August meeting, and so far as I am informed little progress has been made in the working out of any rules or the consideration of any live stock claims. As I understand it, there was a tacit arrangement between your attorney, Mr. Thorne, and Mr. Howard, to the effect that Mr. J. H. Mercer, president of the National Live Stock Shippers' League, should appoint the committee representing the live stock interests, and Mr. Mercer was informed of this arrangement, and, acting on this information, appointed the committee, one member of which was the president of your association. This appointment was made early in December, and Mr. Howard was appraised of the same, but up to the present, so far as I am informed, the committee has never been called together. And I feel that during your present session here, some very pointed resolutions covering this whole matter should be passed. In the meantime, we have been advising our members everywhere to file their claims for damages the same as they did prior to government operation, as we feel that eventually these claims must be settled.

Another important matter which has demanded the attention of your association for some time is an attempt to try to improve the live stock train service to Chicago. During the summer and fall most Iowa points only had two days each week on which they could ship stock to Chicago without having it unloaded at the Mississippi river, for rest and feed. It is needless to say that this condition was very unsatisfactory to the farmers, and necessitated the shipping of a lot of stock to the river markets, which was mostly sold to speculators and re-shipped to Chicago. The bulk of stock so handled usually meant a big loss to the farmers, besides an extra haul by the railroad. Accordingly, the fore part of September we started out to try to improve this situation by laying the whole matter before the regional director of railroads and his assistant at Chicago, and interesting them in the problem of giving Iowa shippers an extra day each week on which they could ship stock direct to Chicago without unloading. Mr. M. J. Gormley, assistant regional director, began working on the proposition at once, and after several conferences on different phases of the service with your president, the new train schedules were finally prepared and issued about December 10th, and the new live stock service has just been inaugurated when I was called to California on account of the illness of my brother, and as I have just returned I am not at all familiar as to whether the new service is satisfactory or not to the farmers and shippers. However, if it is not, we should like to know what the trouble is, and no doubt it can be corrected.

The officers of your association were also consulted on various occasions and at different times by the officers of the Federal Bureau of Markets, in regard to the taking over of the different stockyards, live stock commission merchants and exchanges. A number of conferences were also held in regard to the working out of the rules and regulations which should be put in force for the protection of the live stock interests, and we feel that on account of these exchanges of views that a more satisfactory and practicable set of regulations was adopted, and that the men in charge of these public utilities have a much better knowledge and understanding of the real needs of the business.

Different conferences were also held with the live stock traffic committee of the Railroad Administration at Washington and other points, and much correspondence passed between your officers and the chairman of that committee in regard to the various rules and practices affecting the stockmen in the shipment of their live stock, among which was the working out of uniform live stock contracts, uniform rules for governing care-takers, maximum amount of feed per car to be fed to live stock at the different feeding points, and many other important regualtions affecting the shippers generally, which are of importance to the farmers. We feel that out of this will come lasting benefit, as we believe that the commingling of your officers with these men in the different departments and the exchanging of views on these various subjects will give them a much better understanding of your needs and bring them in closer touch with the real producers of the country.

Many other matters of interest and importance to the farmers and stockmen of the country were taken up at various times and in different ways by your officers, and, in fact, they were constantly on the alert in an endeavor to protect and safeguard your interests. As to how well they have succeeded, we leave it to you to judge, realizing that mistakes were made, and that we did not secure all that we had hoped for.

The question of what disposition to make of the railroads now that the war is over is a most serious and vital one, and is attracting the attention and sober thought of many of our ablest men. Whether these roads should be returned as soon as practicable to their owners for operation and control, or whether the gvernment should continue its present plan of operation, or whether it should become sole owner of the railroads, are questions on which there is a great difference of opinion. Personally, I am inclined to look upon government operation of the railroads, at least so far as it affects the shipment of live stock, as almost a dismal failure. Never in the history of the business has there been such unsatisfactory service over such a long period as has been experienced since tht government took control of the railroads. Just who is responsible for this condition, or why it should be, is very difficult to ascertain. The present fall and winter have been the most favorable for years for the movement cf trains, and yet the reports are common and numerous of apparently unwarranted delays in stock reaching the market, and terrible losses to farmers and shippers have been caused by these delays. Of course, we must bear in mind the fact, and due allowance should be made for the unprecedented receipts of live stock that have been arriving at the Chicago market for the last sixty days, which would within itself naturally necessitate more or less delay in a certain portion of this stock reaching the market. This being true, we must not criticize the service too severely.

As for myself, I believe if the government is to continue to operate the railroads, that all of the powers formerly possessed by the Interstate Commerce Commission and the various state railroad commissions, in regard to the making of rates and general control over the carriers, should be restored at once, and that any shipper who has a damage claim against any railroad should have the right to bring suit to collect such claim in any district court where he may reside. And until the government takes cognizance of some of these very important questions which are causing our shippers so much trouble and dissatisfaction, and proper remedies are adopted, in my judgment, government operation will continue to be very obnoxious to the shippers of the country. Personally, I believe that the old system of operation by private corporations is much more preferable and satisfactory to the public in general than the experiments that have been going on for the past thirteen months.

The Iowa state legislature is now in session, and there are some important questions affecting the farmers at this time that should have the attention of this body, and we believe that now is the time for you to speak out and let the legislators know what you want, and I would advise that you speak to them so plainly that there will be no danger of them misunderstanding your language.

In closing, I wish to say that your association has a bright and serviceable future before it. While the results in some respects during the past year have not been as satisfactory as we had hoped for, yet on the whole your organization has done efficient work, and on account of the important part your officers have taken in the many big problems confronting the farmers during the past year, your association has been more in the limelight and come to be looked upon as a most powerful factor in protecting the interests and shaping the destinies of the farmers and feeders of the corn belt than it ever has in the past. And while, on account of the many war activities and other urgent matters that have crowded in upon your official force, making it impossible for them to give the personal attention to the building up of the membership that they should have liked to give during the past year, yet I believe the greater and more lasting results have been accomplished and the real worth of your association as a most potent factor in guarding and protecting the farmers' interests have been so clearly demonstrated and proven that the work of securing members in the future on this account will be greatly facilitated; and if proper solicitors are put in the field during the present year, I believe that you will realize a most satisfactory and unprecedented increase in your membership.

So with this hope in view, and feeling perfect confidence in the future of your association, I leave the whole matter with you. I have tried in this rambling way to give you a brief summary of what we have tried to do. I hope you will overlook our mistakes and forgive any neglect of duty if such there appears to be, and that we may all unite for a greater organization during the present year. I thank you.

PROFITABLY LIMITING THE STEER'S GRAIN RATION.

By John M. Evvard, Iowa Experiment Station.

(Read by Prof. H. H. Kildee.)

Shall we feed grain to our steers, particulary good corn grain? If so, shall we self-feed it, or full-feed it by hand; or, maybe better yet, had we better not limit the grain ration to say 75 per cent or 50 per cent or 25 per cent of a full grain feed? How about this?

These are some of the problems that are coming up nowadays in ever-increasing fashion, especially now that corn has gone so relatively high in price. With shelled corn selling at about one-half what we used to pay for sugar, we tend to pay much attention to its conservation.

Perhaps we can get along without any grain at all excepting the protein supplement and the corn grain which is found in our silage. How about that? If it is possible to fatten two-year-old steers, for instance, without any extra corn, and fatten them profitably, that will be in the interest of war-time conservation in that the grain will be released for more suitable purposes, such as the making of corn meal and hominy grits, and the feeding of hogs and fattening of lambs.

It is generally conceded that where one does not have silage and is pushing cattle for the market, that a very liberal grain ration is in order. It is possible, in this case, providing one has clover or alfalfa hay, to limit the grain ration to say one-half of a full feed, and yet give good results, but, generally speaking, liberal grain feeding is in order. It must be remembered, however, in clover or alfalfa hay feeding that the cattle are not getting any grain in their roughage like they do when they receive corn silage, and hence one of the reasons undoubtedly that hay-feed cattle need to be fed grain in large quantities if they are to be fattened economically. Hay in itself, or hay supplemented with linseed or cottonseed meal, is not sufficient to put on a high finish or even a moderate finish unless an extraordinary long time is taken in the feeding.

With the advent of silage an entirely new field has been opened up, and an entirely new scheme of feeding in so far as grain allowance is concerned, has been found to be more efficient that the old scheme of stuffing grain from start to finish.

Then, too, with the increase in the number of silos, there has come a decrease in the margins paid for the well-finished cattle as compared to those moderately finished or quite well finished. With the war changing ordinary demands, we have found that the market has not been paying high premiums for especially well-finished cattle, and that the difference existing between prime cattle and choice to prime cattle is smaller now than it was five years ago.

This all means, therefore, that these changing market valuations, as reflected in the demand, have their effect on the method of feeding, in that one can not afford to fatten to such a high finish as formerly excepting under certain specific conditions.

The question of experimental proof needs to be given consideration. We have experiments covering the issues above outlined. The Animal Husbandry Section of the Iowa Experiment Station has been doing work along these lines, and there has appeared a bulletin from Ames, written by W. H. Pew, Russell Dunn and the author, entitled, "Limiting the Grain Ration for Fattening Cattle." Anyone desiring a copy of this may secure the same by dropping a line to Director C. F. Curtiss, at Ames.

In the year 1915-16 we fed five groups, all of them receiving as much corn silage as they would clean up twice daily; linseed oil meal, two pounds per head daily; alfalfa hay, 1.6 pounds, and salt ad libitum.

The differences, then, between these various groups were primarily due to the way the shelled corn was fed. Group 1 was self-fed; Group 2, full-fed twice daily by hand; Groups 3, 4 and 5, respectively, 75 per cent, 50 per cent and 25 per cent full-fed by hand. In the case of the latter three lots, the amount of corn was regulated by the full-fed group. The results are very, very interesting, indeed, and point out a valuable lesson in the feeding of these two-year-old 1,000-pound steers for 120 days.

The self-fed cattle as compared to those full-fed made a slightly greater daily gain, or 2.98 pounds as compared to 2.94. They both ate practically the same amount of the different feeds, or in the vicinity of 15.5 pounds of shelled corn, 2 pounds of linseed oil meal, 30 pounds of corn silage and 1.6 pounds of hay, together with a little salt, daily. The cost of gain was practically the same. The selling price was 20 cents per cwt. in favor of the hand full-fed group, making the profit per steer practically $1.50 more where hand-fed methods were used than where the cattle were self-fed.

In the second year, where the same comparison was made, the self-fed cattle had some advantage over the hand-fed ones, in that they made .3 of a pound greater average daily gain. They cost per hundred pounds of gain practically 70 cents less, and sold at practically the same per hundred pounds. The profits this year, however, were about $2.50 in favor of the self-fed cattle. In the two years self-feeding seemed to have a little the advantage.

The question arises as to whether we should give the cattle all the grain they want, either by self-fed or hand full-fed methods. Let us study that phase of the question.

All of the groups in the first year's test, 1915-16, receiving limited rations, actually showed greater profits per head than did the self-fed or hand full-fed groups. To illustrate: The self-fed cattle returned $33.83 per head profit, while the hand full-fed cattle returned $35.32. Now, note that all three limited-fed groups, each taken in comparison with the two just given, show higher profits, the 75 per cent of a full-fed lot, or, namely, Group 3, making a profit of $35 75; the 50 per cent lot, $38.76, and the 25 per cent lot, $40.43. These profits are figured on the steers after crediting the feed picked up by the hogs. By profits we really mean margin per steer over feed costs, inasmuch as we have not figured in the manure nor the labor nor the interest in these tests. Every one can do this to suit his own convenience. The main points we are trying to bring out are those covering differences in ratios. In this first year, therefore, it is seen that the greatest profits per steer were secured where only one-fourth of a full shelled corn ration was allowed.

The selling price of these cattle showed an average of $11.40 a hundred for the two full-fed lots, as compared to $11.40 per hundred, respectively, for both the 75 per cent and the 25 percent groups. The 50 per cent groups sold for $11.25. An average of all the limited groups would be $11.35, or five cents per hundred pounds under the full-fed; but this five cents margin in favor of the full feeding did not justify the extra cost of the ration, because of the high-priced shelled corn allowed.

Briefly speaking, therefore, according to this first year test, limited grain feeding was in order, because the cost of gains was considerably less than where full-fed; the grain feed for 100 pounds of gain was reduced over two-thirds where a 25 per cent ration was fed as compared to a hand full-fed one, and the grain ration daily was decreased from practically 15.5 pounds to about 4 pounds. The silage, however, was increased by limited grain feeding from about 30 pounds up to 54 pounds, but this increase is on a roughage feed, corn silage, which ordinarily is produced on our farms more economically than the grain feeds.

We repeated this 120-day test, as hereinbefore described, the next year, comparing self-feeding with hand full-feeding, with one-half grain feeding, with one-fourth grain feeding. The ration otherwise was handled the same, inasmuch as all the corn silage the steers would consume daily was given, alfalfa hay limited to 1.3 pounds; linseed oil meal, 2.5 pounds—all this with a little salt.

Where 13.4 pounds of shelled corn was fed daily in conjunction with 34 pounds of silage, the margin per head was $41.43, but where one-half as much corn, or 6.7 pounds, was fed, with approximately 10 pounds more silage, or 44.9 pounds, the margin was increased to $43.02, a clear advance of more than $1.50, or exactly $1.59. Remember, however, in all cases, that 2.5 pounds of linseed oil meal were fed per head daily, which is highly desirable, and that the alfalfa was kept the same, namely, just a little better than a pound.

Now, where one-fourth as much corn was fed, or 3.3 pounds, along with 50.7 pounds of silage, the profits were still further increased over full-feeding, or by a difference of $3.69, or, namely, to $45.12.

Here, again, we note that for 120 days' feeding the cattle receiving a light grain ration as compared to a heavy one, made the most profit per head. The selling price of the steers showed an average this year of $11.69 for the two full-fed groups, as compared to $11.55 and $11.48, respectively, for the two limited-fed groups, or an average of $11.52 where the grain was held down one-half to three-fourths. Here is a difference between the full grain ration and a limited one-half to three-fourths ration, therefore, of only 17 cents per hundred pounds on the selling value of the steers, which is not enough to offset the extra costs in gains, which amount to $1.84 per hundred in favor of one-fourth grain feeding, as contrasted with full-feeding by hand. If 300 pounds were put on a steer, this difference in cost of gains would amount to three times this figure, or $5.52 on the steer in favor of limited feeding, and if the steer weighed 1,300 pounds at the time of going to market, this would necessitate an excess selling value of between 42 and 43 cents more for the heavy grain-efd cattle as compared to the light grain-fed ones.

Inasmuch as the difference in margin has been running only about 10 to 25 cents on Iowa fed cattle fed in these two different ways, the justification for feeding a full grain ration is not to be found in the profits.

Some folks like to make their cattle fat, and take great pride in doing so, but most every one wants to make his pocketbook fat. To do so, it looks as if it would be a splendid plan to sell the cattle with a little less finish, and to get that finish with a heavy silage and light grain ration.

In all of our experiments at Ames on limited versus full feeding of grain, the cattle carcasses on the hooks have justified the valuations in the yards. The dressing percentages have been very close, averaging, as would be expected, a little higher for the full-fed cattle, but with only an approximate difference of one per cent. The meat from the carcasses was quite acceptable according to the market demands from both systems of feeding, there being very little difference in this respect. It was noticeable that where the fat cattle had inclined to become a little rough or patchy, that thse carcasses were discriminated against much more than any of the carcasses in the lighter-fed lots.

Professor H. O. Allison, of the Missouri Experiment station, has been doing some very practical work on this problem. He began his investigations in the same year as did the Iowa Experiment Station, but instead of feeding different proportions of grain to his cattle, he fed them a full-feed of grain versus no grain at all. In brief, he fed two groups full-feed and two groups limited-feed rations, the difference in these pairs being that one received cottonseed meal and the other linseed oil meal.

In the first year's results, the limited corn-fed cattle receiving cottonseed meal as contrasted with the full-fed corn cattle receiving the same supplement, returned $3.10 per head greater margin, or $6.77 as compared to $9.87. Where linseed oil meal was fed with the full ration, the margin was $9.32, but where fed with the limited ration, the margin was $14.56, or a difference of $5.24 in favor of limited grain feeding.

In the full-fed grain lots, the corn averaged better than fifteen pounds in conjunction with approximately 2.5 pounds of supplement, but in the limited-fed lots the total grain feed amounted to approximately five pounds, this being all supplement, either cottonseed or linseed meal.

In the Iowa results, the supplement was kept the same in quantity, or from two to three pounds of linseed meal per head daily, and the difference made entirely in the corn grain ration, but in Allison's Missouri results on limited feeding he cut out the corn entirely and practically doubled the supplemental feed, allowing about five pounds to the limited corn lots and one-half as much to the full-fed corn group.

The practical results were, as indicated, in favor of limited grain feeding, or, in other words, five pounds of cottonseed or linseed oil meal fed in conjunction with corn silage and some alfalfa hay, was more profitable than a little over 15 pounds of corn plus a little more than 2.5 pounds of supplement in conjunction with silage and some hay.

In the second test, Allison's two-year-old steers, of about the same weight as the previous year, showed in the cottonseed meal group a difference of $11.60 in favor of the corn being replaced entirely by 4.5 pounds of cottonseed meal. Where linsed oil meal was fed, the difference was $5.55 per steer in favor of replacing the heavy corn and linseed meal ration with 4.5 pounds of linseed oil meal. Of course, as in the Iowa results, the corn silage consumption increased markedly where corn was decreased. In the first test, the full-fed group ate about 17 pounds of silage, whereas those receiving only supplement in addition ate 37 pounds, or more than twice as much. In the second test the difference was between 30 and 48 pounds.

The selling price of the cattle showed a difference in favor of full-feeding in the first test of 2.5 cents on 100 pounds, averaging all lots. In the second test, the difference was greater, or 65 cents a hundred, but yet even with this difference, the margin or so-called profits averaged more than $8 per head in favor of the limited grain feeding.

In passing, it is profitable to note the differences between cottonseed meal and linseed meal, as worked out by Allison. He added these two supplements to a shelled corn, silage an dalfalfa hay ration (the alfalfa hay limited to from two to six pounds) in the one case and to a silage-hay ration in the other. In all cases the amount of supplement was kept the same. The results show clearly in favor of linseed oil meal for these two-year-old cattle when both the linseed and cottonseed meal cost the same.

In the first test, with full-fed cattle, the profit per steer receiving linseed oil meal was greater by $2.55; where linseed oil meal as compared to cottonseed meal was added to silage and hay, a difference of $4.69. In both cases, therefore, in the first year, whether the meal was added to a full grain ration with silage and hay or simply to silage and hay, the results show in favor of linseed oil meal.

In the second year the linseed oil meal added to a full ration showed a difference of $10.08 per head in favor of the flax by-product over cottonseed, and where added to silage and hay a difference of $4.03 per head as compared to the southern feed.

These figures all go to show, therefore, a unanimous agreement as to the value of linseel oil meal as compared to cottonseel meal under these conditions. We have always been of the opinion that a mixture of cottonseed and linseed oil meal would likely be better than either fed alone, and still think this is the way to feed these supplements, but have no figures to back up the suggestion.

We have found at the Iowa station, however, that for calves linseed oil meal is much better than cottonseed meal, and we would not hesitate to pay 20 per cent more for this product if the roughage was corn fodder or hay with a large proportion of timothy and so on. One year, I remember well, that with cottonseed meal costing $30, the linseel meal was worth $47, but the linseed oil meal calves in this test sold for 25 cents a hundred pounds more than the cottonseed meal fed ones, which spread made a big difference when applied entirely to the supplement. The roughage used in that experiment was a poor grade of clover hay.

The Indiana station has been doing some work on limitd grain feeding, but their results do not show as favorably to the limited feeding as the Missouri and Iowa figures.

The whole question resolves itself down to a question of selling values of cattle, and if the differences on the final selling market are not sufficient to justify the extra grain feeding, then the limited grain allowance is economically in order. Generally speaking, one is pretty safe in saying that if the differences are not more than 50 to 65 cents per cwt., that limited grain feeding should be most seriously considered.

In one test last year at the Indiana station, where cattle were full-fed as compared to where no grain at all was allowed, there was a difference in the selling value of the cattle in favor of the full-feeding of 80 cents, thus making the profits greater for the full-fed cattle.

The Iowa results in 1915-16 showed that the full-fed cattle would have to have sold at the end of 120 days for 63 cents more per cwt. than those receiving one-fourth of a grain ration, in order to make the same profit per head. In 1917, the full-fed cattle would have to have sold for slightly over 50 cents more per cwt. than those receiving one-fourth of a grain ration, in order to make the same profit per head.

In the Missouri results, first test, the full corn-fed cattle receiving linseed oil meal, as compared to those receiving no corn, but with twice the allowance of linseed oil meal along with silage and hay, would have to have sold for approximately 50 cents more per cwt. In the second test, with the same supplement, the difference should have been approximately $1.10 in order to have played even with the cattle showing a lesser finish.

All these figures then, tend to substantiate the fact that if the full-fed cattle do not sell for from 50 to 65 cents more per cwt. than the limited fed cattle, that the question of full-feeding is cast in serious doubt.

At best, cattle feeding is a complicated proposition, and what to do tomorrow or the next day is dependent upon a large number of factors that may have been altered, figuratively speaking, over night. In short, steer finishing is quite a complicate proposition, requiring much skill in the purchasing or producing of steers, in handling them preparatory to final feeding to a marketable finish, in the selection and utilization of the proper feeds, such as silage, hay and grains of a basal and supplemental nature; in the purchase and correct manipulation of the feeds during the feeding period, particularly as regards relation between grain and silage and grain and supplements and hay and silage; in the determination of the length of the feeding period most acceptable and most economical under local conditions; in the decision as to what weights to finish it, realizing that in some years heavily fed cattle sell relatively higher, and vice versa; and in shipping and marketing to the best possible advantage. We must continuously bear in mind that the cattle feeder that is most successful is the one that studies his methods, and most of all the one that is constantly changing his schemes to meet the new and different but certain-to-appear conditions that alter the general situation. The good practice of today may be the bad practice of tomorrow. Watch the crowd, but don't necessarily follow. Above all, watch your markets, watch your relative feed prices, watch your relative margins, and most of all watch yourself.

The President: At this time I desire to announce the appointment of the committee on resolutions: J. M. Brockway, William Larrabee, W. P. Dawson, H. J. Gridley, C. E. Arney, A. L. Ames, Ralph Sherman, John Kelley, C. A. Fox and R. Meyers.

The President: Let us be in order, gentlemen. The first speaker on our program this afternoon is Mr. J. L. Howard, president of the Farm Bureau Federation, who will address us now on the subject of the "Iowa Farm Bureau Federation."

THE IOWA FARM BUREAU FEDERATIOIN.

By J. L. Howard.

Mr. Chairman and Members of the Corn Belt Meat Producers' Association: I happen to be here this afternoon because I was unfortunate enough to be chosen president of the Farm Bureau Association, and I understand I am to speak of the proposed work of that federation—what we have done and what we hope to do.

I assume you are thoroly familiar with the work of the county agent, and I hope the county agent work in your respective counties has been as satisfactory and successful as in my own. Three or four years ago, I was one of the men who did not think much of the county agent movement. I supposed I knew my own affairs, and did not propose to have any little "upstart" come and tell me how to feed and when to sell. It so happened that I went to Chicago with a Clinton bunch of men, and they were talking about the county agent. I also went west on a trip, and thruout nearly all the western states I came in contact with the county agent work, and I came back home enthusiastic and took up the work in my own county, and it has proven absolutely successful.

The county agent work in the counties has aimed in the past, at increased production; especially during the last two years or during the war period, the county agents have given nearly their entire time to that line of work, and little to the other lines county agents should take up. The idea of a state federation is not peculiar to Iowa. Nearly all the eastern states are federated. The idea of a state federation primarily was to correlate the work of the county agents of the different counties. One county seems to have been working along one line, and another county along another line. They lacked unity One county may have an idea which should be handed on to other counties, and for that reason we thought the work could be correlated and strengthened very much by a state organization or state federation.

More than that, however, was the thought that the work has been principally productive and not economical The great problems of economic agriculture have not been touched. Our Agricultural College virtually has not touched them at all. The Deartment of Agriculture—without criticism or fault-finding—its activities are directed by men who are professional men rather than farmers, who develop the projects for increased production and let the details of marketing go—the marketing channels and transportation question are untouched by any power which at present exists, except by organizations such as your own.

So we felt the need of a strong central organization which would take up these various problems. There is the problem of agricultural education. You know well enough, to be successful in our system of agriculture at all, every boy and girl in the state must have equal advantages with the boys and girls in the cities. There is no reason why our country education should not be built up and strengthened, not only in the agricultural colleges, but also in the secondary schools.

Aside from that, there is a thing that has appealed to me all thru the county agent work, and that is the great system of citizenship. You gentlemen know that citizenship and soil run in parallel lines. You do not find the best citizenship on the poorest soil. Good citizenship and good soil run together. If you will study the eastern system, you will see that Iowa needs to get awake on the maintenance of her soil fertility. When I say that I also have in mind the broad matter of citizenship, which is the principal thing we deal with. One of our state executives, in a speech recently, said that these fields, hills and valleys which we see are not Iowa, but that the people who live in these fields and in the towns constitute the state of Iowa. He is partly right, but perhaps not wholly, because the character of the people depend upon the character of the soil of Iowa, and if the soil of Iowa wasn't what it is the people who live in Iowa would not be what they are—the two must go hand-in-hand.

Too many farmers' organizations have not been successful for the reason that they are not organized on a proper basis; they are political rather than economical; destructive, too often, rather than constructive. We are trying to avoid that; we are building on the basis of a county unit with the state federation and the national federation, which is in process of formation at the present time. Our aim in the state federation is not to tear down the work of any present organization, but to lend support to every organization now doing effective work. You, with your splendid work along the line of railroad work and transportation problems, will find in us an organization willing to co-operate with you and assist wherever we can. We, in turn, ask your help and advice. We do the same thing with the grain producers and every other line of agricultural activity. We have no big promises to make; we are going into this business in a careful way, feeling our ground, and we do not expect to revolutionize things in one year, and probably not in a generation. But the problems of agriculture, and the problems of citizenship, and the problems of the farm bureaus of the state of Iowa, are the problems of the Federated Farm Bureaus of the state.

The President: This subject is now open for discussion.

Mr. Doran: Have you succeeded in finding better markets than existed before your organization?

Mr. Howard: Mr. Doran, we are just recently organized. I might say our very first activity was to have a man at Washington today on the hog situation. We do not know what he can accomplish. He has gone there, however, with credentials from the farm bureaus of the state, representing 40,000 Iowa farmers, and he is there endeavoring to get the prices set, not for thirty days, but for at least ninety days ahead, and at as high a figure as possible. He is using the name of the Federated Farm Bureau of Iowa to that end. It will probably take some time to gain prestige and influence enough to accomplish the greatest results. We have four regularly appointed committees, one on organization, one on education, one on transportation and marketing, and a legislative committee. They will direct the activity under the supervision of the secretary, whom we have not yet selected.

Mr. Brockway: I would like to ask how this Farm Bureau is financed, and how will this work out as a practical proposition between an organization like the Corn Belt Meat Producers and the Farm Bureau—what would be your idea as to that?

Mr. Howard: With regard to finances, our constitution, which was adopted at the meeting in Marshalltown, provides for an assessment for each county, not to exceed 50 cents per member at the present time. There are in round numbers 40,000 members in the Farm Bureaus of the state. This would give a working fund of $20,000 for the year. That would be used to employ the secretary and office help and traveling expenses, and if we needed to employ an attorney to fight rate cases and to take up the work in a general way.

So far as the possible relationship between the two organizations is concerned, it would occur to me that it would work out something like this: We will have our general secretary, who will be the working official head of the organization; the management will devolve upon him. Suppose a question of transportation should come up which would affect both the Farm Bureau Federation and the Corn Belt Meat Producers' Association; our secretary would be glad to co-operate with your secretary, and our committees with your committees. We would expect to do the same thing along other lines as concerns Farm Bureau work and the Corn Belt Meat Producers' Association. We have discussed that, and can see where they can be harmonized to the benefit of both.

The President: At this time we will digress for about five minutes, in order that Mr. Moss may present a measure that is now being considered or is going to be considered by the legislature, in regard to the control of bovine tuberculosis in the state.

Mr. Moss: I am taking it for granted that every man here is interested in a proper live stock sanitary law in the state of Iowa, and especially for the stamping out of tuberculosis in our herds. At the present time, as constituted, our Live Stock Commission is not in control of the breeders; it is controlled by the veterinarian of the board. This measure has been drafted by the live stock interests of the state, and I believe I am safe in saying this is the first time that the live stock interests of the state have been interetsed and unified to back a measure of this kind. It practically repeals all laws we have at this time. It is an act to establish a Live Stock Sanitary Board, and to provide for the control and suppression of infectious diseases, etc. In drafting this measure, we have tried, as far as possible, to eliminate the matter of politics.

(Mr. Moss here read the proposed measure.)

The President: I think we all realize this measure is an important matter. It is a matter that has been before the people of the state for years, and some of these days it is going to be settled by a new measure, but it is something worthy of our consideration during the sessions of this meeting.

The next number on our program is entitled, "Work of the Market Committee of the American National Live Stock Association," by Mr. E. L. Burke, of Omaha, Neb. Mr. Burke is a large feeder, and also a member of the Market Committee of the American National Live Stock Association, and he has had a great deal to do with the investigation of the Federal Trade Commission just recently made of the packers of this country. Mr. Burke will tell you about some of these things at this time.

WORK OF THE MARKET COMMITTEE OF THE AMERICAN NATIONAL LIVE STOCK ASSOCIATION.

By E. L. Burke.

Gentlemen of the Corn Belt Meat Producers' Association: I was permitted to address your association on the express stipulation by your secretary that I should have a very carefully prepared paper on the work of the market committee. I readily assented, because I was very anxious to have a chance to talk to you, but not having any time, I didn't prepare a paper, and as a stockman who has been engaged in feeding cattle and hogs for the last thirty years in the neighboring state of Nebraska, and as a man who speaks your language, thinks your thoughts and has everything he holds in life in common with just such men as you are, it is my opinion that I can win your sympathy, and possibly your support, by having a very plain, homely talk, just as one stockman would talk to another.

I had the privilege of attending a very large meeting of stockmen in Denver last week—the annual meeting of the American National Live Stock Association. At that meeting there were representative men from all over the western part of the United States. The American National Live Stock Association has not a very large membership east of the Missouri river, but is thoroly representative as far as the great west and southwest are concerned. I wish you could have been there. We had some very representative men there from the east. Secretary Houston was there; William E. Culver; Senator Kendrick, who has introduced what is known as the Kendrick bill in the senate. These men talked to the western stockmen of the things we were most interested in. The principal thing discussed was the question of packer legislation, and I shall hope to interest you on that subject.

Before I go into the details of the legislation, I wish to review very hurriedly the work of the Market Committee of the American National Live Stock Association during the last three years. At the meeting at El Paso, three years ago, the Market Committee was appointed, and the purpose of the committee was to bring out facts in regard to the conditions at the market—monopolistic conditions, as we thought at that time existed, and were growing steadily worse.

You will remember that 1914 and 1915 were pretty uphill years in the cattle-feeding business, and conditions had reached such a point that there was a great discontent, a great feeling of unrest, and that something ought to be done. The market committee was the instrument selected at that time to investigate the facts, and after the facts were brought out, to suggest proper remedies. The mission of the market committee has been stated—I noticed in the papers yesterday—by one of the leading packers, at Washington, who was on the stand yesterday, in connection with the hearings on the Simms or Kendrick bill. He said the mission of the market committee is to bring about higher prices for the producers. Now, our dastardly purpose having been discovered by the packers, I shall have to admit that is one of the purposes of the Market Committee. But the gentleman from Chicago failed to enlighten the committee down there as to another object of the Market Committee, and that is to simultaneously increase the price for the producer and, on the other hand, to reduce the price for the consumer. We hope to do that by eliminating unfair and uneconomical prices which prevail in the marketing distribution in live stock and live stock products.

When we started in three years ago, the instrument that appeared to us most available for bringing out the facts was the Federal Trade Commission. It so happened, just about that time, the Borland resolution was introduced, providing for an investigation by the Federal Trade Commission. We fell in with that scheme, and did our best to get congress to authorize that investigation. It is a long story, and we were confronted by a stone-wall resistance on the part of the packers, and while we worked faithfully with every means at our command to bring about that investigation, before congress, we were unable to secure it, but finally the same thing was accomplished by the President himself, ordering the investigation by the Federal Trade Commission, in February, 1917, a little over a year after we commenced work.

I might say that the history of that Borland resolution in congress is very interesting. It would pay you to read it and know the facts in regard to it. Congress and the judiciary committee were influenced in all kinds of ways. I understood the chairman of the committee, and also the chairman of the house committee, after the Borland resolution was finally defeated, danced a horn-pipe in front of the speaker's chair.

We got the investigation because we had a President who thought one was needed, and the result of that investigation, extending over a year and three months, you probably are more or less familiar with. It was given out last July, I think, in the summary of the report of the Federal Trade Commission. But, to go back a little, during the year 1918, and reviewing the activities of the Market Committee: In April, 1917, as you remember, the war intervened, and the activities of the Market Committee were very much complicated. Our problems were involved in the great war problems of the nation. As you know, live stock still continues to be a part of the war problems of the country.

As soon as the war broke out, and the food control act was passed, we did our best to secure some regulatory measures in connection with the packers, and as a result the packers were put under a federal license, and have been under federal license ever since. Of course, that federal license, as it was drawn, has not been altogether satisfactory. The administration of a license, as you know, is over half of the battle. The license may be ever so good, if it is not administered properly it does not get very far. On the other hand, a pretty poor license, if it is administered as it should be, accomplishes a great deal. In this case, there were defects in the license and very serious defects in the administration of the license, because the people who administered the license had not the facilities, even if they had the desire, to strictly control the packers under the license, and the license itself was so drawn that there were a good many loop-holes. The profits were supposed to be regulated, but it happened that only a part were regulated. It was divided into three divisions. Number 1 was regulated on the basis of a 9 per cent profit on the capital invested; Number 2, from 9 to 15 per cent, and Number 3 was unregulated. You can see, where there is no unified system of accounting, it was very easy to transfer charges and in making entries shift the profits or losses from one part of the business to another. In other words, the profits from the regulated field were easily transferred into the unregulated field. On the whole, the license was not by any means a perfect license. It was a beginning in the right direction, however, and on the whole I think we have reason to congratulate ourselves that the license was put into effect.

Speaking of the problems being merged into the greater problems of the war, you will remember the restrictions being put on the consumption of meat products by the Food Administration a year ago. The restrictions on cattle and sheep, both of them were unnecessary and altogether too strict, and as a result of those restrictions the prices went down to a level that put stockmen in a very serious position. Your president, Mr. Sykes, has told you about the efforts made by the representatives of your association. I want to say at that time the Market Committee stood shoulder to shoulder with your representatives in Washington, in trying to bring about better conditions, trying to have those restrictions removed, and the opening up of the outlet for our products. One thing we thought should be brought about, and that was the adoption of the National Live Stock policy. Everything seemed to be pretty chaotic at Washington. It seemed to be a question of the Food Administration getting by from day to day in a hand-to-mouth proposition. We thought if representative men could be appointed down there in Washington to map out a national live stock policy, and then notify the producers what they could expect to depend on, things might be better. As a result of the pressure brought to bear at that time, the President did finally appoint a committee of five—departmental committee, representing the Deparment of Agriculture, one from the Food Administration, one from the Department of Labor, one from the Federal Trade Commission, and one from the Tariff Commission. Those men, after studying the live stock situation very carefully, did make a report along early in the spring, perhaps in May, and as a result of that report they outlined a pretty fair program, and the first thing they said was in regard to the packers: We do not recommend government ownership and operation of the packing houses, except as a last resort. We do, however, recommend the most strenuous kind of regulation, and we do recommend that the license under which the packers are operating will be revised so that there will be a real control instead of only an apparent control.

They recommended, among other things, a uniform system of accounting be adopted by the packers, and that fell on the Federal Trade Commission to devise such a system. The Federal Trade Commission went to work on that system of accounting and perfected it, and Mr. Colver told me last week it had not yet been put into operation. The wheels of the government are pretty ponderous, and move slowly. Among other things, the committee of five recommended that the commission men, the traders and stock yards, all be put under a federal license, and as a result of that recommendation they were licensed, and that went into effect last fall.

Now, these recommendations were of course temporary, and would all come to an end, and would terminate with the war, under the food control act, when peace was signed, and we go back to the old conditions which prevailed before the war, unless there is some kind of legislation enacted to take their place. That is a very important matter, and a matter to which I wish to direct your attention most emphatically. While the committee of five were working out their program, the Federal Trade Commission was hard at work on its report, and along in July it made a summary of its report. I wish to read you just a few words in regard to that. I am quoting from the report of the Market Committee of the American National Live Stock Association:

"Let there be no misapprehension about our standing squarely back of the Federal Trade Commission. Its findings of fact are exactly in accordance with what we have charged. The remedies proposed are not radical; on the other hand, they promise the maximum amount of benefit, without disturbance to the industry. It is most unfortunate for both the producer and the consumer that the character of the report has been grossly misrepresented by reports sent to the press, so that the public has received an entirely wrong conception of it, believing that government ownership and operation of the packing plants was recommended, when, as a matter of fact, the commission's remedies dealt solely with the facilities for marketing, distribution, storage of live stock and the products of live stock.

I presume nine out of ten men you meet on the street have received the impression from the packers' propaganda, which has gone from one end of the country to the other, that there is government ownership and operation involved in the recommendations of the Federal Trade Commission. In the first place, so far as taking over the packing houses themselves and operating them, that has never been even considered or mentioned, but the recommendation of the Federal Trade Commission deals solely with the facilities of the marketing and distribution of the live stock.

I think you will be interested to hear from Mr. William P. Colver, chairman of this commission. He gave us a very interesting talk in Denver. I will quote a few lines of what he says in his report:

"After we had been told by congress to gather the facts concerning food control and prices, we spent $250,000 of your good money on the job. At the beginning we found the five larger packers were in very close touch secretly. We found their hand in Washington, and found it in other places, even in associations like this. We saw they tried to stop your market committee from passing the resolution calling for a federal investigation. Then we saw how they tried to switch it to an economic investigation to be made by the Department of Agriculture. But the commission was given powers which the department lacks. It was enabled even to open secret safes and examine every paper bearing on the inner system of control. When they failed to block the commission at the start, they intimated that the commission wouldn't have as long a life as Methusaleh.

"Well, it doesn't need it. If a body does one good job, it should be content to die. None of us had to do it for a living.

"We reported the facts as we found them, without the slightest malice and without any preconceived notion as to what they would prove to be. They can have paid advertisements from California to Maine, but they can not get behind the facts.

"The packers were not the only ones investigated. It was a general inquiry into food distribution methods. The other industries have not kicked. They haven't said we weren't fair. It all depends on what you say about a man whether he kicks. No one does so if you give him a clean bill of health."

Here is another quotation:

"They criticize the language in which the report was written, but I failed to see what difference that makes so long as the facts are in the report, and the packers do not say the facts are not there. They can not deny the facts, because they were obtained from their own files.

"The packers tell you that it is Bolshevism to license packing houses, commission men and stock yards. But the packers have been licensing the commission men, so if it is Bolshevism, it must be all right for them. They have been licensing the commission men through clauses in their leases which permit them to oust a commission man from the stock yards which they control, if he does not follow their regulations."

I wish you could have heard Mr. Colver talk to the cattlemen out there. The Federal Trade Commission are not people that are going to back up. They know their rights, and no United States Chamber of Commerce, and no group of packers, are going to be able to back the Federal Trade Commission off the map. They have got the President behind them, and I believe they have the united support of the stockmen of this country who have taken the trouble to investigate the situation and really know what the facts are.

Of course, it has been very difficult to do that. The unprecedented campaign of publicity which the packers have been engaged in during the past year is something almost beyond belief. Their side of the question has been presented from a perfectly partisan standpoint, while the side of the producers and consumers has not yet had a hearing. It is most unfortunate. Just to give you a conception of what this campaign of publicity has been like, you probably noticed in the testimony of Louis F. Swift, yesterday before the senate committee on agriculture, in which he admits that his firm alone spent last year for advertising $1,700,000, and he further admitted or stated that in matters of that kind the packers are in a pool, each contributing to the pool on the same basis in which the meat pool was handled in 1902. That was a pool they were operating at that time, where the territory was divided, each to pay a certain portion of the territory mapped out. Of course, that method of control and combination was abandoned shortly after that time, on account of the government prosecution, and they adopted another system which accomplished the same result, and that was by dividing and turning in the receipts, each packer taking a certain percentage of the receipts at the various markets. For instance, a market like Denver, where Swift and Armour are the only ones, they divided on the 50-50 basis, as young Philip wrote his uncle a number of years ago. He was out there looking over the Denver plant, and he wrote to his uncle: "You know the divide here is on a 50-50 basis, and our plant here is so inadequate that there should be immediate improvements here." Mr. Armour explains that 50-50 basis, not on the basis of combination, but on the ground that that was the natural economic division of the business at that point. It just came about naturally. It is a good deal like Arthur Meeker talked a number of years ago. He said: "Well, what are you fellows trying to do, anyhow? This business is a natural monopoly, and you can't get away from it." I was going to say, on the basis of $1,700,000, if Armour and the two Eddies had contributed their proportion that would be about $5,000,000 that these people spent for advertising alone. That would make quite a little difference in the price, if it could be divided between the producer and the consumer, without doing any harm to anyobdy.

I would like to read you just a few words in regard to the publicity situation. We were at our wits' end to know how we were going to combat this campaign. Our friend charged us with being in a conspiracy yesterday, and he also said he had it on good authority that the Market Committee themselves had spent $150,000 per annum in connection with this work, and he thought that was a pretty dangerous thing in the hands of men who might misuse that fund, and it might be well to have some kind of an investigation to find out how that money was used. As a matter of fact, I am sorry to say that the money we could get last year to combat this $5,000,000 campaign of the packers was only $13,550. I am sorry we did not have $150,000, because then we might have gotten a little publicity as a counter-offensive. We recently got out a statement to the editors of the United States, in which we clearly stated our position, and I am just going to stop long enough to read you a few lines from that statement:

"The American National Live Stock Association views with serious concern the extraordinary campaign of concentrated power and concentrated profits which the packers have been and still are conducting to influence American public opinion.

"It does not possess the financial resources with which to combat it on its own ground, even if it desired to do so. All it does desire to do is to make certain that the evidence and arguments of all parties in so vital a controversy shall be fairly and fully presented to the great popular jury of the country.

"It believes that neither the producer nor the consumer desire anything that is unfair to those who perform the necessary and useful functions of slaughtering live stock and marketing its meat and other products. It believes, however, that they so desire to open, and to keep open if possible, the door to free and fair competition in every branch of the great business of supplying the consuming public with the products of the farm and ranch, and that, while such competition is being established, the practical monopoly which has confessedly existed in the past, and which the Federal Trade Commission has found exists today, shall be effectively regulated and controlled for the protection of the interests of producer and consumer alike."

That statement to the editors of the American press, I think you will be interested in looking over. There have been about one hundred copies of it sent here, and you will find them on the table as you go out.

Now, gentlemen, coming to the matter of legislation, that is the real milk in the cocoanut, and that is what I want to direct your special attention to. In the first place, as we look at it, in order to remedy the condition that exists today, there are three courses open: First, regulation, control by regulation; second, the restoration of competition; third, government ownership.

Now, gentlemen, I know how unpopular government ownership sounds to everybody, particularly at this time. We have had a little dose of government ownership. I want to say to you, as far as the Market Committee of the American National Live Stock Association is concerned, we are against government ownership. But I do want to impress this fact upon you, that we are for the restoration of fair and open competition if it can be brought about thru regulation and control, and if that fails, if it is impossible to control and regulate these people, or in any way restore competition, then there is only one other course open, that is the radical course, that is the last resort, and that is the government taking a hand in it. I hope that it may never come, but I confess, gentlemen, that it will come. The socialistic and the radical element in this country will insist that that kind of thing come if these other less radical measures do not prove successful. I want to say this in connection, that I think the packers themselves are the most short-sighted men in not being willing to accept the suggestions of moderate and right-thinking men. They may have to take a much more radical medicine if they do not fall in and cooperate with the producers and consumers at this time in helping to secure regulation of a moderate character.

I wish to say in this connection that there are two bills before congress at this time, one known as the Sims-Kenyon bill, the chairman of the house committee on interestate and foreign commerce having introduced it in the house and Senator Kenyon having introduced it in the senate. Do not understand because Senator Kenyon introduced the Sims bill in the senate that he is supporting it and committed to the Sims bill, because when I was down there two weeks ago, Senators Kenyon and Norris were very much interested in the Kendrick bill.

I want to say that the Sims bill really works out in a practical way the recommendations of the Federal Trade Commission; it really embodies what they were recommending. Before the President left the country, he handed the bill to Mr. Sims. The bill had been handed to him by the Federal Trade Commission, and he stated to Mr. Sims that he wished he would introduce it and push the legislation similar to the character of that contained in the bill.

The Secretary of Agriculture also has decided views in regard to the legislation necessary. At our meeting last week, at Denver, when he came to the question of legislation, he said the need of legislation on this subject is so obvious that he was not even going to discuss it. The question is, he said, what kind of legislation we want at this time. In his annual report, he says: "The restoration and maintenance of conditions which will justify confidence in the live stock markets and meat packing industry are the greatest single need in the present meat situation in the United States. It seems desirable, therefore, that the necessary legislation be enacted at the earliest possible moment."

He also publicly stated that in his opinion the Kendrick bill furnished the best basis for legislation on this matter which had yet been presented to congress. I will quote from the Denver paper in regard to Mr. Houston's views:

"We do not want the distribution of meat from the time production is planned on the range until the finished product is delivered to the consumer, left in the hands of a few men. The packers tell us that they are more efficient, and can do this work better than anyone else; but that is what paternalists always have said. For my part, I want less of paternalism and more freedom."

Senator Kendrick, who introduced the Kendrick bill, made a splendid address out there. He has personality and magnetism, and a great many qualities which have endeared him to the west and southwest, and they look to him for leadership, and the west seems all ready to fall in behind Kendrick. I think Colver hit the nail on the head when he stated in regard to the Kendrick bill: "Senator Kendrick is one of you; he thinks just as you do; his interests are identical with yours; he speaks your language. I believe anything Senator Kendrick thinks is right in the way of legislation." It looks as if the chairman of the Federal Trade Commission was willing to get behind and help on the Kendrick bill.

I will give you an idea of the fundamental difference between the two bills. They both accomplish the same thing, only in different ways. But the Sims bill gives the President very broad discretionary powers. It authorizes him—that is, he may, it is not mandatory—it authorizes him, if he sees fit, to acquire certain of these market facilities, the stock yards, also the facilities for distribution, like the refrigerator cars and stock cars which the packers own, and storage plants and branch houses, and after acquiring them he may operate them, if he so elects, thru such agency or agencies as he desires; or if he does not wish to do that, he may lease those various facilities and operate them that way. As interpreted by the Federal Trade Commission and by Sims, the ideal is, the less drastic feature of the bill should be put in operation first; that is, that these various facilities should be licensed, and in case that fails, then the more drastic provisions of the bill should be brought into effect. Unfortunately, in connection with that bill, there is a very large amount of money authorized, the appropriation of $500,000,000. That, of course, is an amount of a staggering size. The Sims bill is unpopular because there are those words, "government operation and control." The Kendrick bill, however, goes at the matter in a different way. The provisions of the bill are in the most part mandatory, and it has just three important features: First, the segregation of the stock yards from the packers' ownership, and gives them two years in which to dispose of their interests in the stock yards; second, the railroads must take over and operate the refrigerator cars and furnish all shippers refrigerator cars on an equal basis of distributing meat products. The packers owning the refrigerator cars must enter into an agreement in six months with the railroads whereby their refrigerator cars may be distributed to the trade on equal terms. That contract between the railroads and the packers must be subject to the approval of the Interstate Commerce Commission. The third feature of the Kendrick bill provides for the general licensing of the packers, commission men and the traders. That license is to be administered, not as in the Sims bill, but by the Department of Agriculture. The Department of Agriculture, as you now know, is administering the licenses under which the commission men and the traders are operating. It lays down certain stipulations that shall be contained in the license, not leaving it entirely to the discretion of the Department of Agriculture—and perhaps this is a very wise feature. The Sims bill gives discretionary powers. Among other things it says that there must be the greatest publicity in connection with the packers' business, and a uniform system of accounting. The Department of Agriculture has a right to examine the books and papers, examine witnesses under oath, and bring out all the facts in regard to this great industry. There are certain stipulations in regard to what the profits shall be, and that is largely within the power of the secretary.

Now, gentlemen, in a general way that is the difference between the two bills, and I want to say that the American National Live Stock Association, the Market Committee, foresaw several weeks ago that it was impossible to pass the Sims bill, for the very reasons I have pointed out, and the only possible hope of legislation at this session of congress was the putting across of the Kendrick bill. The packers have not realized that there was to be a shift from the Sims bill to the Kendrick bill, and they have expended large amounts of munitions in shooting up the Sims bill, and apparently have not saved very much for the Kendrick bill. We are perfectly satisfied that they should keep on using up their money and munitions on the Sims bill, if we can get the other one.

The testimony of the big packers has been very interesting. Mr. Armour said the other day they were perfectly willing to give up the ownership and control of these facilities—stock yards and refrigerator cars and the instruments of distribution—provided that equally good service could be guaranteed; but he says that would be impossible. Now, gentlemen, if you and I owned a public utility which was contrary to the public welfare, do you think that would be good practice to stipulate the terms on which we would be willing to give up that public utility? If we did have that privilege, would you consider that an example of a special privilege? Mr. Swift got off something the other day that was equally amusing. "Yes," he said, "we are willing to concede we need regulation; we will stand for regulation; but," he said, "we do not want any control we want the kind of regulation that does not control."

I notice that the matter has come to such a pass now that Mr. Armour proposes that he himself draft a bill which will be fair to the producer, consumer and distributer. I am waiting with a great deal of interest to see what that bill is like. It might be a splendid bill. Mr. Armour has gotten to a time of life where he certainly is not dependent on what he makes from day to day for a living. He might get up a bill that would be the crowning act of his life; that would be altruistic of his nature; at any rate, I would like to see the bill.

I hope the members of this association will study the Kendrick bill, and if they can see their way clear to support it, I hope they will do everything in their power to see that the bill is passed at this session of congress. It is a matter of nation-wide importance. There should be no hiatus in the regulation of this great industry between the time peace is signed and the new legislation is put into effect.

We are told by Mr. Hoover there are something like 20,000,000 tons of our products which are needed between now and the next harvest in Europe, to take care of the hungry people over there. A great many of those people are starving, as you know. Some form of regulation is vital, if these food products are to be distributed economically, without chaos, speculation and profiteering. Just the minute the food control law goes out of effect, that condition is going to prevail in this country, unless some legislation is enacted to take the place of this system. Our live stock alone that are to be exported will probably amount to over 2,000,000 tons, and the very people whom these bills aim at are the largest dealers, not only in live stock and products, but in many other essential food products that will be required for export. It seems to me we merely have to state the condition to recognize the tremendous necessity for some form of legislation. The forces of production and distribution need mobilizing as they never were before, to feed these starving people on the other side. Famine, you know, is the mother of anarchy, and if anarchy spreads in Europe, and unrest prevails over there, the real democracy for which we fought, for which our sons have died, will be defeated, and we will have made the sacrifice in vain.

I think the legislation recently passed in congress the appropriation of $100,000,000 to purchase essential food supplies in Europe, was one of the best pieces of legislation ever enacted, and that ought to be followed up by further appropriations. This country ought to be backed up by the Allies coming in and helping finance and distribute the surplus of food supplies to the starving people in Europe.

Now, gentlemen, during the three years I have been connected with the work of the Market Committee, I have been deeply interested in it, not only from the standpoint of the welfare of our own industry, but because it is a great big, man's game. There are hundreds of millions of dollars involved; there is a principle involved, and that principle is whether the live stock industry in this country shall be handled on the basis of a democracy, treating with a financial oligarchy. Are you going to handle it yourselves, or are you going to be dictated to and let a small group of monopolists run the business? In my own mind, I never had any doubt as to what the outcome will be. I felt, when the live stock producers of this country really awakened and realized what the true situation was, there could be but one answer to it, and I do not know of any other body of men who can do more good to bring about fair and democratic conditions in the live stock business and help to place it on a sound basis than the live stock producers of the Corn Belt Meat Producers Association.

I was tremendously interested in your president's statement in regard to the hog matter this morning. I want to say that the men in the west with whom I come in contact, the people of Kansas and Nebraska, appreciate fully the splendid work done by Mr. Sykes and the committee of which he is a member. Not only that, but they feel that a series of editorials published in Wallaces' Farmer, which put the Food Administration right up against the real thing, after they were on the point of repudiating their agreement, had more to do with the change of policy on their part. They saw they couldn't dodge that responsibility to the producer without exposing themselves to all kinds of criticism. I think those editorials had more to do in bringing about a fairly satisfactory hog price this winter than anything else.

The President: For the benefit of the members of this association and the farmers in general, I would like to say, in connection with this legislation, when I was in Washington in October, Senator Kendrick, through Senator Kenyon, invited me to go over these bills and the entire proposition. We spent practically a half day on the packer control of legislation from our different viewpoints, and endeavored to go into it quite fully and thoroughly, keeping in mind the report of the Federal Trade Commission all the time, and I think we got pretty close together in our views. I do not mean to say my views are your views, but I wish to make that statement, that I thought we wouldn't go very far wrong if we supported the Kendrick bill, as I think it is practically in line with the things we most desire and ought to be enacted, and at the same time it is right along the line of the recommendations of the Federal Trade Commission.

CO-OPERATIVE LIVE STOCK SHIPPING.

By L. G. Foster, Iowa Agricultural College.

The beginning of co-operative live stock shipping companies dates back to the year 1908. Previous to this time, but little information has been obtainable that would indicate any concerted action on the part of the producer to ship less than carload lots of stock to market. In rare cases a group of neighbors might make up a car.

From the year 1912 there was a rapid increase of these companies in the middle-west, in states where the farmer had less than carload lots to market. Wisconsin, Minnesota and the Dakotas showed rapid increases during these first years. The success of these first companies soon became known to nearby towns, where in many cases new associations were started.

According to Farmers' Bulletin No. 718, of the Department of Agriculture, shipping companies are developing rapidly in Wisconsin, Nebraska, Indiana, North Dakota, South Dakota, Kansas, Michigan, Illinois, Ohio and Minnesota. In 1916 Minnesota had over two hundred of these companies. In 1917 Wisconsin had better than two hundred and fifty. In Iowa at the present time, according to the latest available information, two hundred and seven of these companies are working successfully. An estimate based on figures from some thirty companies shows that these companies in Iowa shipped stock valued at $75,000,000 in 1918. According to figures obtained from these companies, the farmers have saved from 25 to 85 cents per 100 pounds, or a total saving of not less than $2,500,000.

Several factors may be said to have contributed to the organization of these associations. First, the farmers felt that local buyers received too large a margin of profit. Second, there seemed to be an elimination of competition in some sections, thus increasing a margin already high. Third, the lack of any permanent and responsible means of marketing in some communities has forced their development. Fourth, the desire of farmers to become acquainted with the central market, with the idea of improving their stock to meet the requirements of the market, has been a potent factor. Fifth, the general co-operative movement among farmers, looking for a chance to expand, has found ample room in this direction.

The slowness of development in Iowa has been due to several reasons. First, a great many producers have had carloads of their own stock to market. Second, efficient service in many cases has been given by the local buyers. Third, the general prosperity of the Iowa farmer in the past has not forced him to seek relative small economies in marketing his stock. With an ever-increasing demand for economy in marketing farm produce, the shipping company, as well as other centralized organizations for co-operative action, is sure to increase in numbers in the next few years.

The simple form of organization that suffices for shipping companies is one of their leading features. Practically no capital is required, since payment is not made to the members for stock shipped until the returns are received from market. The common method of organization by the farmers is to hold a meeting, have the problems involved explained, elect directors, adopt a simple constitution and by-laws, and secure a manager.

But few of the companies organized in Iowa have incorporated under the co-operative law. Even the incorporation is not necessary, it is advisable to do so as a protection to the members. The cost of incorporation for such a company can be accomplished by the payment of a filing fee of $1 if it is incorporated under the co-operative law passed by the Thirty-sixth General Assembly, which permits companies with a capital stock of less than $500 to file their articles of incorporation or amendments thereto for $1. If not incorporated, the organization, as such, can not sue or be sued, and in case of loss from railroad wrecks or other causes, the manager could not enforce claims for the association, but each shipper would be compelled to present his claims for his losses.

After an organization has formed, their greatest problem is that of procuring an efficient manager, as the success of the company largely rests with him. He must be capable and honest; he should have a practical knowledge of live stock and the business principles involved in weighing, loading, shipping and receiving the returns from the stock marketed. A man should be selected who has the confidence of the farmers composing the company. Each community has some man suited for this position. As a rule, it has proven best to procure some farmer or local man who will take the time to handle the stock shipped in the best possible manner. A local live stock buyer is well acquainted with marketing methods, but too often he has lacked the spirit of co-operation and has worked for his own interests rather than those of the farmers whom he is serving. This oftentimes leads to misunderstanding and ultimately results in the failure of the company.

A salary should be paid that is sufficiently large to attract an efficient manager. The amount necessary to procure such a man varies with the company. Some companies pay their manager a straight commission per car, varying from $6 to $10. Others pay on the hundred pounds basis, varying from 4 to 6 cents. Still others pay a flat daily wage, varying from $4 to $6. The method of payment is not as vital as the getting of the right man for the position.

In order that each shippers' stock may be identified at the central market, some method of marking should be used. Several methods have been devised by commission firms and local associations. (1) The most common is that of clipping with scissors. A pair of eight-inch scissors with straight blades has proved, after considerable trial, to be the most practical. The common practice of clipping is to start with one clip on top of the neck for the first owner, two clips on top of the neck for the second owner, and so on until the total number to be placed in the car have been marked. It is customary to leave unmarked the owner's stock having the greatest number of head in the shipment. (2) When the hair is short, at certain seasons of the year, a good grade of buggy paint with an equal amount of varnish is often used. Paint should be used only when the hair is too short to be clipped. (3) Perhaps the most unsatisfactory method of marking stock is the use of metal tags. The main difficulty (especially with hogs and calves) is that of getting close enough to stock in the yards to see the numbers or marks. During the past few years several methods of clipping cattle have been devised. Some associations mark with Roman numerals on the right or left hip. The method that seems to be gaining most favor is that of starting at the top of the neck and continuing down either side of the backbone. In marking sheep, the most common custom has been the use of paint, marks being placed on the head, shoulders, back or hips. As but few owners will be found in a carload, a sufficient number of combinations can be made up to meet the needs of the manager. Hogs should be clipped whenever the hair is long enough to show plainly each owner's stock. During seasons when the hair is short, paint should be used. Ear-tags are not satisfactory in marking hogs. It is almost impossible to distinguish the numbers of the tags on hogs, especially during wet weather, when they are covered with dirt. All hogs should be marked by the manager before they are unloaded from the wagon. This saves the unnecessary work of chasing hogs after they are on the scales, and will thereby assist in keeping down heavy shrink.

Out of each shipment there is deducted a certain amount for the payment of losses due to injury or death while in transit, or after stock has come into the hands of the association. This fund is commonly known as a protection or sinking fund, but in each instance has the same purpose. The amount deducted varies with the association. Previous to the present high prices, the usual practice was to deduct 2 cents per hundred pounds home weight on cattle and 3 cents per hundred pounds on the home weight of hogs. In some associations this charge has been raised to 3 cents on cattle and 4 cents on hogs and sheep. Some associations make a flat charge of 10 per cent of the gross return on both cattle and hogs, out of which all expenses are paid and the remainder placed in the insurance fund. Others charge a flat rate of say 10 or 12 cents per hundred pounds, pay expenses, and the remainder goes in the insurance fund.

As stated previously, the insurance fund is set aside to pay for the death or injury of stock in transit or while in the hands of the manager. The question of how much shall be paid lies entirely in the hands of the commission firm handling the stock. For instance, a steer may be injured in transit, and the commission firm will only be able to get 6 cents per pound instead of 11 cents, if no injury had occurred. It is a common custom for the commission firm to deduct 50 cents per hundred pounds for that grade and class on the market, which, in the case enumerated, would be 10½ cents—this would be net to the owner. The amount coming out of the sinking fund would be the difference between $10.50 per hundred pounds and $6 per hundred pounds, or $4.50.

The stock yards company keeps a record of the time of arrival of every train and the number of every car on it. When a train pulls up at one of the unloading platforms, the employes of the yard company open the cars and drive the stock into the unloading chutes. The weigh bills are delivered to the receiving office, where they are read off, giving the name of the shipper, the car number, the kind of stock, and the name of the commission firm who receives them.

The yardman at the chute house or receiving station catches the car numbers as they are called, sees that the stock gets to the commission firm's yards or pens. All crippled and dead stock is identified by the mark placed on it by the manager at home. The alley man counts off the number and kind of head as they are yarded into the commission firm's pens, and gives a receipt for the car. A check is made on the unloading count, to be sure that it corresponds to the invoice received from the manager of the shipping company.

When the cattle or hogs have been watered and fed they are then ready to be shown. With a great many grades of cattle and hogs in a shipment, with a great many owners, the salesman is required to make a great many fine distinctions in grades, and consequently in price. If a considerable number of cattle belongs to the same owner, it is often possible for the salesman to bunch off several head at a better price than he could obtain by selling individually. Where more than one owner is represented this proves impossible. After the sale, the yardman gets the invoice to check each owner's stock as it goes over the scales.

There is some considerable difference in the way commission firms handle hogs. Some claim to weigh each man's hogs according to grade, while other firms claim to handle hogs as straight carloads expect where there is a wide difference in the grade of hogs in the load. Where several owners have several grades of hogs, it is a common custom to sort up these grades, selling several owners' stock as one grade and then taking a separate "catch weight" draft of each man's hogs until all are placed on the scale, when a final weight is taken.

After the stock has been sold, the tickets are delivered to the office of the commission firm, where each shipper's share of the expense of the shipment is figured. On this account of sale the owner of stock can find out his share of the freight, feed, commission, yardage, inspection and terminal charge. It also gives him information concerning the price for different classes of stock and the names of the purchasers.

In talking over the live stock shipping companies with managers and commission men, they claim the following advantages for these companies:

1. The producer gets a greater return for stock marketed.

2. The producer can market his stock when it is ready for shipment without waiting for the buyer to come and see his stock.

3. During periods of car shortage the combined efforts of the company have resulted in their getting their share of the cars shipped out.

4. The shipping company familiarizes the producer with the market grades and classes, and he finds out exactly what his stock is worth on the open market, and this serves as a guide for future production.

5. The carload-lot shipper in many cases has claimed an advantage by shipping thru the company. Some have claimed this has been due to the better service received from commission firms. As one shipper put it: "How can I expect to get as good service with three or four cars a year, when I am competing for this service with a buyer or company that handles three hundred or more cars a year?"

6. Perhaps the most important item to be taken into consideration is the knowledge the producer is getting by finding out what stock is worth, by making a study of the marketing machinery, and finally by getting him to investigate what market is best and when it has been best for given grades of stock, and why it has been best.

EXTENSION WORK.

By Professor R. K. Bliss.

Members of the Corn Belt Meat Producers' Association: I am very glad you have received the information from Washington, as I have hoped that will cheer you up and that you will not be too uneasy while I make a few remarks.

It may seem a little commonplace to talk about extension work at this time, when you have been listening to these talks about economic problems which confront you. But I want to second the statement made by Mr. Howard, the president of the Federation of Farm Bureaus, when he said that the boys and girls in the country must have as good educational advantages as the boys and girls in town, or else the country people will in all probability have less capacity eventually than those in the town. So this educational problem is all-important after all in solving economic problems, because the boys of today will be the leaders of tomorrow, and they are the ones who have to solve the problems.

Extension work, in a way, began at the Iowa State College thirteen years ago, or, to be more exact, the legislature thirteen years ago made an appropriation, and the work began the following summer. From time to time, increased appropriations have been granted for this work, and additional work has been taken up by the department, beginning with a few specialists. There are now upon the extension force specialists representing every department. In addition to that we have the boys' and girls' work and home demonstration work. The United States Department of Agriculture has furnished additional funds for the prosecution of this work, covering the last six years. About that time the county agent system began, and the first county to organize was Clinton county. This work was so well established, that when the war broke out the federal government turned to the extension organization in order to carry thru the war food program of the federal government. The extension department of our state immediately took up this work and worked out the plans, and organized the farm labor bureaus and also extended the county agent system.

By the next February, every county in the state had a farm bureau organization and one county had two. This organization was so complete last February that it was possible for the farm bureau associations to select one co-operator for each four miles of land thruout the state. These men were appointed by Governor Harding, and they immediately unearthed about two million bushels of seed corn, and also made a available stores of seeds held in farmers' hands. This information was all turned over to the county agents, and thru their efforts I feel justified in saying the seed corn situation was met, and some of you had much to do in solving that problem in your different localities. The farm agents, thru the farm bureaus, last year tested over 300,000 bushels of corn for seed purposes. The main object was to get everybody to test their corn, and it is safe to assume many times as much corn was tested by individual farmers as by the association.

The war work of the extension department during the past two years has been effectively supported by the state administration and by the state and county councils of defense, by the War Emergency Food Committee, by the Food Administration, and by other organizations everywhere.

I believe we can safely say that the farmers of this country are the only great working organization which greatly increased the production thru the period of the war with a decreased labor supply. Naturally, the farm bureau organizations of Iowa, of which at the present time there are one hundred, with 40,000 members, take a great deal of pride in the accomplishment of this state, altho they are not claiming the credit. The agricultural extension department was the official organization thru which the federal government acted, and the farm bureaus were the ones who took the burden to put this work thru.

I might go on with other phases of this report, but I do not believe I will take the time, but will make a suggestion or two here for the future.

Great things have been accomplished in this country during the past two years. In the face of the common enemy we have forgotten our jealousies and differences and pulled together. In my experience in the extension work, I never have known a time when there was more cordial, whole-hearted co-operation among the farmers of this state than during the past two years. It would certainly be a pity if we permitted this spirit of co-operation to subside now that the war is over, and go back to the old way of "each fellow for himself, and the devil take the hindmost." As a matter of fact, the farmers of this country are facing the most far-reaching world's problems of their history, problems even greater than the problems during the war, and our great problem is to pull together and keep these organizations going, and I want to further the remarks of Mr. Howard, that the farm bureau association is not trying to swallow up any other organization. It attacks farm problems in a broad way—economic, educational and social. Its object is to improve country life in every possible way.

Now, in a practical way, the problem is to bring the different farmers' organizations of this state together for concerted action, and the great danger at the present moment is that the many farmer organizations in our state, not understanding each other, will fail to act collectively upon some of these topics, and thereby we will fail to get the results which we ought to achieve. I feel that most of the misunderstandings of life between individuals are due to the fact that we are not acquainted with the other fellow; we do not know his objects and purposes. I believe the same thing is true with organizations. If you have had a difficulty with your neighbor, you can nine times out of ten straighten it up if you will go and talk the thing over, or if you are in the habit of talking things over with him, the difficulty probably will never occur. The same thing is true with reference to the different organizations of the state.

I would like to suggest that the different organizations of the state select representatives—perhaps the presidents or secretaries, three delegates, we will say—who can meet three delegates from each organization, who can meet two or three times a year, or as often as necessary, in order to go over the problems of the farmer. You can call them an agricultural council. I do not think their recommendations ought to be mandatory, because of the enormous differences in interests involved, but I do believe a council, acting in that way and making recommendations, would receive the approval and would at least keep all the organizations informed as to what each is doing.

That is our big problem in this state, to bring the various organizations together, so that we can work together as a unit. I think it would be a fine thing if some such organization as yours, an old organization, which has been doing business effectively and successfully, would be the prime mover in making some such suggestion as that.

In closing, I want to say that the agricultural extension department is peculiarly a people's department. The grants of money which it has received from time to time from our federal government have come because of the desire on the part of the people of this state. I assure you it is the desire of the management of the agricultural extension department at the present time to do the things that need to be done, and we welcome your suggestions and your help in working out the problems confronting the farmers of our state.

SECRETARY'S REPORT—1918.

Receipts for year		$6,046.50
Disbursements—		
Bank collection fees	$ 79.31	
Annual meeting	134.75	
Directors' expense	77.26	
Refunds to county associations	24.50	
Expense of delegates to Washington, etc.	165.98	
Stamps, printing, annual reports, etc.	805.31	
Securety bonds for secretary and treasurer	20.00	
Donation to American Live Stock Association	200.00	
Clifford Thorne, legal services	1,400.00	
President's salary and expenses	2,570.83	
Secretary's office	1,000.00	
Total		6,477.94
Deficit on year's business		$ 431.44

The President: Next we will have the report of the auditing committee.

REPORT OF AUDITING COMMITTEE—1918.

We, the Auditing Committee, have examined the books of the secretary and the accounts of the treasurer; have checked each item of expense, and find the books correct.

Balance in hands of treasurer, from 1917	$3.640.10	
Receipts this year (less bank collection fees)	5,967.19	
		$9,607.29
Expenditures for year (less bank collection fees)	$6,398.63	
Voucher from last year	103.00	
		6.501.63
Balance for the year		$3,105.66
On hand with treasurer, not reported to secretary	$ 85.00	
Less amount overpaid by secretary	.90	
		84.10
Real balance with treasurer		3,189.76

C. G. COCKERILL,
W. P. DAWSON.
WILLIAM LARRABEE, JR.

Committee.

THE FARMER AND PEACE LEAGUES

By the Hon. Gifford Pinchot.

I appreciate the kind introduction President Sykes has been good enough to give me. That is the kind of thing that makes a man feel very cheerful.

The other day I had a letter from William H. Taft, asking me if I wouldn't speak for the farmers in the League of Nations. There was a time when Mr. Taft and I did a good deal of harrying of each other across the fence, but it is different now. Now what he asked me is a difficult thing to do, in a good many respects, because the farmers never have taken any position whatever, so far as I know. And, after a while, when Mr. Wallace asked me to come out here, it occurred to me there would be no more representative body than this before which it would be possible to lay some conclusions that I had reached as to what the farmers probably would want. Therefore, with your permission, I want to try some of these conclusions on you.

The way my mind worked to it was something like this: That the farmers are closer than any other great body of men in the country to carry the solid reality; that they have their feet on the ground more than any other representative group of citizens, and that they are in my judgment more apt to be right in the long run. They were slow to get into the war, as compared with some of the people of the cities, but once they were in, they were in all the way, and no greater contribution has been made to the fighting or success of the war by any other body of men in the United States than they have made.

It strikes me also that the opinion of the farmers on a good many questions had been sung by others. There was a great deal of talk in high-brow circles to the effect that the Germans could not be beaten; that we had better take what peace we could get. So far as I know, the farmers never fell into that error. They intended to win the war and stay with it until it was won. Neither was there any response to the proposition afterward that the Germans should be let off easy; that we must not leave them with a peace with which they were not satisfied. I never saw any sign of the people of the open country falling into that delusion.

It has seemed to me, as far as I have come in contact with the farmer, that somebody had to pay for this war, and if the people that started it didn't pay for it, then the people who were innocent would have to pay for it, and I thought the farmers of the country wanted the burden to lie just exactly where it ought to lie. I thought they were also of the opinion that the Germans could not pay unless they could trade with other nations. It seemed to me, as far as peace was concerned, there were three things we wanted:

First, a just peace; a peace that meant reparation to the injured and punishment to the guilty.

Second, that we wanted this war to be the last war, so far as it was humanly possible, and the necessity for preparing for war.

Third, I thought the farmers of this country wanted a quick peace, and get the boys back as soon as possible—not a minute before our job is done, but just as soon as it is done.

It struck me like this:

First, that the greatest and most powerful and superb organization that this world has ever seen has just arrested the most dangerous gang of hold-ups on earth. That the sheriff came pretty nearly being the Lord Almighty Himself. That there are several things that have got to be done now. That the first is that a part of the posse which is no longer needed must now be sent home to go to work—that is, demobilization.

Second, the criminals must be tried and sentenced and set to work out their own sentence—that is peace.

Third, that we have to make a certain reorganization of the posse, sc that in the future, instead of having to punish those who are guilty, we will have a machine to prevent wars—that is the League of Nations. Incidental to that we have got to have the property stolen returned to its proper owners, and the cause for the irritation removed.

Fourth, that the communities from which the posse came have got to reorganize themselves so as to get what they fought for—that is reconstruction.

Demobilization is already well under way. I regret as much as you do that the coming of peace found us unprepared in doing what we should have done to help our soldiers get back in the places they ought to have, instead of turning them loose to shift for themselves, and that there were many mistakes made in not supplying dependents while the bread-winners were on the other side.

Demobilization is not reconstruction. Reconstruction is getting what we fought for. We fought for democracy and justice. We paid a price we hardly realize. We have not paid one million, five hundred thousand lives, as France; nor six hundred thousand lives, as England. We will, however, feel it for years to come. The paying of these enormous taxes, which are going to be tremendous for a long time—and they were comparatively easy while the war was on, but now the enthusiasm is more or less removed, and we have got to pay them in the gray dawn of the morning to come. So let us get out of this what we ought to get out of it. The price is gigantic.

Now the terms of peace that are made on the other side are going to be not only our terms, but our children's terms and our grandchildren's terms. This is the most formative period in the history of the world since Christ. The decisions made now will have more to do with the affairs of billions of people than anything else that has ever been done in the world. Therefore it is our business, as I see it, to take account of these things and to think about them, and let our conclusions be known.

Three things have got to be done at the peace table. In the first place, Germany has got to be sentenced. What I hope will be done and is going to be done is that Allies, including ourselves, ought to get together to make up their minds what ought to be done with Germany.

Second, the creation of new nationalities, especially in eastern Europe.

The question relating to that are complicated beyond description. New boundaries have got to be laid down and new access to the sea given to nations. New questions of self-determination have got to come up, and with it the twisted and complicated question of preventing causes of conflict.

As I thought that over, it seemed to me that the farmers of this country would not be misled into thinking the phrase, "self-determination of peoples," was a cure-all, the same as no annexations and no indemnities. I thought that the farmers of the north at least remember what their fathers fought for and many died for, to prevent self-determination of peoples from splitting this nation in two, and that therefore our farmers did not believe this thing was a cure-all, because it does not always work.

Then as to the League of Nations. We have got a league now—the most powerful organization of nations which ever existed; so powerful that it was able to crush the military strength of the greatest single military power; so united that it was able to put all the power under a single command. This single body had not only been dealing in arms, but it had pooled its food, and the whole economic structure was being conducted under joint control. The war brought this about. I thought it would be a shame—I thought the farmers of America would think it the same way—not to take immediate advantage of the existence of this league, and to build on that a structure which will eventually have some control over the peace of the world. I thought the farmers of America would see to it that this body ought to be controlled by those nations that can be trusted So I thought the League of Nations we are going to have ought to be built up from that, with the hope that gradually it could come to do the things that some of its most enthusiastic promoters believed it can do from the start. Human affairs move only about so fast. After the policemen were invented, it was many centuries before the individual stopped carrying arms for his individual protection. Even today many persons in this country carry arms.

I do not want to be misunderstood. I am for the League of Nations, very strongly. I think if this war ended without a League of Nations, it would be a world-wide calamity. But that does not prevent me from figuring out what can practically and actually be done with a League of Nations, instead of adopting the plans of dreamers, and that we might lay the foundation for the kind of unity in the public sentiment and resources, and finally in the arms of the world, which eventually, when it had been tried out, tested and found good, would be able to do the thing which at first I did not believe could be done. It seemed to me altogether impossible, for example, that France, with its ruined and invaded province, would be justified in leaving her safety in the future at the mercy of the signatures of a few plenipotentiaries, on a piece of paper. But France has got to have material guaranties. In other words, we have got to fence in this bull as well as put a ring in his nose.

So I thought this League of Nations, not a new-world state, but an organization that would, for example, leave each nation composing it to handle its own affairs, just as in the past; that the League of Nations would not say. There shall be no more tariffs by the United States against

Argentina on meat and wheat. That it would not "butt into" the question as to whom we should make citizens and whom we should not. That it should be somewhat of an elastic organization, mainly to give the nations of the world a chance to talk things over together.

Another thing I thought about—the international relations of nations are matters of daily importance, and it has seemed to me, before we had gotten very far with the League of Nations, we should discover it was very much more economic than a political or military organization. In other words, it would have to do more with the common, ordinary, daily relations of the world than with extraordinary crises that come up from time to time. Then I remembered that during the last days of the administration of that great man—the greatest loss, I think, that could come to the world at this time is the death of Theodore Roosevelt—that during his administration the nations of the world had been asked to send delegates to an international conference, whose object was to make an inventory of the natural resources of the whole earth. Some twenty-five nations accepted that invitation. Then when the next administration came in the matter was dropped. These nations were to come together to find out what there is for man, and after that arrange for the best possible distribution of raw materials upon which human life depends. I have always thought that in that plan lay the germ of very much such a League of Nations as we are going to get now.

Assuming that I have interpreted without too much distortion your idea of a League of Nations, let us go back for a moment to some of the questions coming up now at the peace table. I have been very much impressed with this, that no attempt whatever has been made to have agriculture represented at the peace conference, either directly or as advisory bodies. We all know that Samual Gompers is there representing labor. You have read in the papers that one of the first points to come up will be the establishment of international standards with regard to labor. They are proposing to put into the peace treaty itself certain guaranties for the workers off the farm, but there is no guaranty for the welfare of the man who works on the farm—a most extraordinary situation. More than half of the people of the United States live in the country and in country towns; yet, so far as I am informed, there is no official proposition whatever to see that they are looked after in the framing of the greatest and most formative document any of us ever knew anything about. Agriculture is the most international; the great bulk of the trade of the world is the product of the farm; wheat and cotton are probably the most international products. Isn't it fair and right, under these circumstances, that the farmers of the world should be considered? Why haven't they been considered? There is just one reason: Because the farmers of the world are not organized as the industrial workers of the world are.

Now, suppose we had a representative body in Paris demanding from the peace conference the rights of the agricultural peoples of the world—what would we ask for? There does not exist an international agricultural program, as there exists an international labor program. I have tried to write down some things I think such a body ought to ask for. Doubtless you can suggest others. But the whole thing has been let alone, and we have fallen down in not putting our side of this proposition before the world as we ought to do.

Some things asked for by agriculture would be a greater improvement and expansion of the Agricultural Institution at Rome, which, after all, is simply an international crop-reporting organization. We might ask for an improvement of the crop-reporting systems. We might ask for a special agricultural body as a part of the permanent organization of the League of Nations, whose duty it would be to safeguard the interests of international agriculture. Then we might ask for the adoption of a set of principles, just as labor is asking. What ought these principles to be? Again there isn't any program. Nobody has formulated such a set of principles. If we send a body over there to do what they can to help agriculture to get a square deal, what are they going to ask for? Nobody knows. We have fallen down in the organization of a national scheme, and we are paying for it right now when we most ought to have it, and fail to produce it. Among these principles might be such things as these: Universal free education in the open country, so that the children in the country would have a recognized right to just as good a training as the children in town. Equal pay for equal skill and equal work—an equal opportunity in many ways, such as hospital facilities, and so on. Equal social reward—the benefits of our modern civilization to be available in the country as in the town. Universal recognition of the rights of farmers to organize, both corporal and otherwise. You know farmers have been indicted for daring to organize for their mutual benefit (the milk producers, I am talking about). The gradual taking of steps which would end tenancy on the farms—to get as many farms as possible in the hands of men who own them. In some states, Illinois, for example, 60 per cent of the farm land is in the hands of tenants. In Texas it is 50 per cent. I do not know what it is in Iowa. This is one of the most critical questions the farmers have to face. No agricultural land ought to be held permanently for renting, and in the end the object should be to get all lands in the hands of the men who cultivate them. Another thing might be to withhold from export supplies which are essential to agriculture.

I am talking. as you see, in an effort to get a program, because we haven't had, as other interests have had for years, a national organization behind us.

You will notice, gentlemen, that the demands that have been made in the matter of reconstruction in this country, almost without exception are the demands of small groups of men, asking, nine times out of ten, for the things they wanted before the war, for the benefit of their own group, and leaving entirely out of consideration the great, big questions which deal with the whole nation, and especially is this true that no kind of reconstruction will be any good unless it applies to the three great groups out of which this nation is made—business, industrial labor, and the farmer.

Now in conclusion I want to read a set of principles adopted the other day by the Agricultural Reconstruction Committee of the National Board of Farm Organizations, a body which represents two million organized farmers, which body has had the good sense, as I think, to understand that out of the farming population of the United States must come the plan which will cover the whole field. The farmer stands at the bottom and upholds the whole structure. The food producer is the basis of everything, and therefore he is in better position than any other man to prepare and extend a combined plan that will be fair to every one. These are the principles which are laid down:

"Resolved, That the partial report of the Agricultural Reconstruction Committee of the National Board of Farm Organizations be adopted, and that the committee be instructed to submit its final report at the earliest practicable moment to the executive board, which board shall ransmit said report, with its amendments, if any, and its recommendations, to the constituent bodies of the National Board of Farm Organizations for appropriate action upon the same.

"PRELIMINARY REPORT OF THE COMMITTEE OF FORTY-EIGHT, ADOPTED JANUARY 4, 1919.

"Whereas, Agricultural reconstruction is an inseparable part of the long, difficult and intricate task of readjusting our lives, our customs, and our institutions to the new, broader and less selfish outlook created by the world war; and,

"Whereas, Reconstruction is as wide as the nation and its problems impossible to be solved from the narrow standpoint of any interest or any class; and,

"Whereas, The future of our form of government, the development, prosperity and happiness of our people, and to no small degree the safety and welfare of the world, hang upon the manner in which the people of America shall deal with the problems of reconstruction; and,

"Whereas, Old problems as well as new are involved, including as the foundation of all others that greatest material problem of humanity, the use of the earth and its resources for the greatest good of the greatest number for the longest time; and,

"Whereas, No other body of our people touches the earth so closely as the farmer, none other is so essential to the welfare of all our citizens, and none so large in numbers and in service; therefore, be it

"Resolved, by the Agricultural Reconstruction Committee of the National Board of Farm Organizations, meeting in Washington, D. C., January 4-6, 1919, that it is right, wise, appropriate and opportune that the farmers of America should prepare and publish a general plan for reconstruction after the war; and be it further

"Resolved, That said plan should be based among others upon the following facts and principles:

"1. That any hasty solution of this great question is almost certain to be unbalanced and unjust, and that the plan finally adopted must be based on thoro knowledge and full consideration of the essential facts both at home and abroad.

“. That said plan shall not be limited to securing the welfare of any single class or interest, but shall be designed to assure justice to the producer and consumer alike, and to bring safety and prosperity to all the people of our common country.

“3. That said plan shall recommend no change for the sake of change, nor accept any ancient wrong as constituting a vested right.

“4. That the making, maintenance and protection of prosperous homes is the first object of government, and that the most valuable of all citizens is the man who owns the land on which he grows the crops that yield his living.

“5. That the labor of men's hands is prior in time and superior in right to accumulations of capital, and that a government does better when it helps a poor man to make a living for his family than when it helps a rich man to make more money.

“6. That a community of interests exists among all workers, whether on or off the farms, and that it should be expressed in common action for the common good.

“7. That the public good comes first; that pay for services not rendered is an unjust charge upon the whole community; that a monopoly used for private ends is always wrong; and that the whole nation suffers whenever the standard of living for any class or any family falls below the level of decency, efficiency and self-respect.

“8. That the people in American cities are fed in considerable part by the unpaid labor of the women and children on American farms, and that it is of the first importance to both that the country producer and the city consumer should understand each other.

“9. That farming is a highly skilled profession, which should be paid no worse than equal skill elsewhere, and that the trained farmers of America are worth more to the nation than the lands they cultivate.”

I have been greatly impressed in the last year or two by the fact that the farmers of the United States are competing on unequal terms with the organized people who are opposing them. In the first place, they are competing against a unified organization without unified power to meet it; in the second place, against trained economic knowledge without that knowledge themselves. I have seen no more valuable suggestion for the benefit of the future of the farmers of this country than the proposal made by your secretary for a school of economics, in which most of the farmers would be prepared to meet the members of capital and labor.

If any one thing has been beaten into me in the course of a good many years of experience with farm questions in the United States, it is that until there should exist in this country an organization strong enough to speak with one voice for the farmers from one end of the nation to the other, the farmers will never get what is justly their due in any one of the great fields of the world we are obliged to meet in competition with the organized powers we have got to fight.

ADDRESS BY THE HON. CLIFFORD THORNE.

You must pardon such remarks as those of Mr. Sykes; you know folks are generally proud of their babies.

This is a day of revolutionary changes in government and in industry. We have been applying the acid test to matters of all kinds. That man who has failed to ask whether this is worth while in his life, and whether that method is the most efficient to accomplish results that he has tried to get, has failed to be in harmony with the spirit of the times.

Various industries have been trying to rid themselves of those things that were superfluous, and get down to the very best in their lines. In the live stock industry, you are concerned with three great tasks: First, the improvement in the efficiency of production; second, the transportation of your products to market; third, the sale of these products.

Each one of these departments of your work demands great thought to suggest anything to you in regard to the improvement in efficiency of and careful scrutiny by the very ablest of you men, and I can not pretend to suggest anything to you in regard to the improvement in efficiency of production. That is entirely outside of my sphere of action.

In regard to the sale of your products, it seems to me that we as a group have been exceedingly inefficient. Generally people know what they are going to get for an article before they lose control over it. Theoretically, you may still have control of your live stock when it gets to Chicago; but actually, with the high cost of transportation involved, you are practically helpless, and you do not know in advance what you are going to get. Some method, somehow, must be devised to change that situation. I have not the answer to the conundrum, but believe that is the central issue—how you can effectively get a price on your product before you lose control over it.

At the present time, we have an investigation before some congressional committees, as to the Chicago packers. The Federal Trade Commission has made an extended investigation. The methods of operation of these companies illustrates in a magnificent manner what the big industries of the country are doing. They have the closest sort of co-operation among themselves. They employ the very ablest and most efficient help they can secure along all lines. You cannot blame them that far. When they go a step farther and impose burdens on the live stock industry, then they must be subject to punishment. I don't know what the proper legislation should be. I am in favor of throwing the broad searchlight of publicity on all their acts, and then find out if there isn't some practical manner in which the producer can protect himself and his interests, just as the Chicago packer protects his interests.

Two years ago I went to Chicago. The particular occasion for my going there was the National Live Stock Shippers' League, the Corn Belt Meat Producers' Association, and other live stock interests had an investigation before the Interstate Commerce Commission in regard to rules and regulations and rates on transportation of live stock throughout the United States. At that time I had this vision in my mind: I was in hopes that I could gather around me a force of traffic experts and assistants, not employed spasmodically from time to time when a case arose, but men in my constant employment, who would be able to help me, just as the railroad traffic men, attorneys and rate clerks help them, so that when I went into any case I could perform my task for you gentlemen just as efficiently as the other fellow was performing his task. I thought there was room for such an organization on behalf of private industries, and I thought the live stock industry, the farmers, were probably as keenly interested in reasonable rates, rules, etc., on transportation, as any other branch of industry in the United States. The jobber or manufacturer is only interested in the preservation of the general level of rates primarily to see that the rival pays the same that he pays. You folks are interested not only in preserving the relationship between rates, but in seeing that you are not compelled to pay excessive charges. Why? Because the price of your commodity at the terminal, less the cost of getting your product to market, determines the price you pay. You can not "pass the buck" on to the consumer; you are the man that pays the freight bill.

The jobbers and manufacturers of this country organized very effectively what is known as the National Industrial Traffic League. When we get into one of those tests, these gentlemen are generally willing to grant an advance, provided their competitors are forced to pay the same amount.

So that the farmer, above all others, is most deeply concerned in this subject. You are obliged to take the initiative and not rely on the manufacturers or jobbers of your cities, but to take the initiative on your own behalf before congressional committees and courts. But very fortunately, another group of interests are involved in somewhat the same manner, and that is the independent oil industry. They are dependent on rail transportation in competition with pipe line transportation. Those gentlemen have seen the wisdom of doing precisely what I have outlined, and as a result they are spending from ten to twenty times as much as you gentlemen in making preparation for contests of that character. The general counsel for the Western Refiners' Association recently told me he didn't think it was fair for them to assume so much of this burden, if the live stock and grain people were really concerned, and thought that it was important that they should bear more of the burden necessary to perform this work efficiently and ably.

I am here today to give my clients a report of what we have tried to do during the past year. If this work has not been worth while, it is time to stop it. I am also going to outline to you some of the matters now pending, and then it is up to you to see that the work is continued or not continued, because it is your work and you constitute the boss.

A year ago we had just closed the 15 per cent case, when I appeared before you gentlemen at the Savery Hotel. The railroads of the country had asked for a general advance of $400,000,000, the largest single case in history. Several hearings had been held and the Interstate Commerce Commission had declined each application, during the course of the year. The western railroads had just asked for a re-hearing, and that application was withdrawn. Consequently, when I was here before you at that time, we found ourselves having avoided any general advance in freight rates.

The gravity of the situation comes in this manner: When the railroads are able to impress the public of the necessity for more revenue, the result is that they then try to remove certain privileges you had in the past, and impose other burdens and increase rates on these people who are not the best organized to protect their interests. During the past year we have seen a general advance in rates, not $400,000,000, but something like $900,000,000 or $1,000,000,000. It has been repeatedly said that we were fighting a wrong contest; that if we had not opposed the advance of 1917, we would not have had this large advance of 1918, and the railroads would not have been placed in the serious condition that the government found them in when they were taken over. I think I have correctly stated the charge. Now, is that charge sound, true, or is it false?

Because of the development in 1917, today the railroads are demanding we shall not go back to the conditions existing in 1917; that we shall not give the power to the Interstate Commerce Commission and the state commissions that they have had in the past. They say that the thirty years of regulation we have had before the government took over the railroads constituted a period of failure so far as regulation is concerned; that our method of regulation was too severe; that it broke down. I am here today to claim that position is absolutely wrong, and that we must go back to the pre-war conditions just as quickly as possible. I am here to claim that we have not had a year of government operation of railroads, but we have had a year of railroad operation of the government, and I am going to prove it.

First, as to the revenues. It is true that you have had $900,000,000 or $1,000,000,000 more of an advance in rates. Why was it? Was it because the railroads broke down in 1917? A few days ago I was sitting in the hearing before the senate committee in Washington, and I heard Mr. Krutchnitt, of the Southern Pacific Railroad, prove with incontestable figures that the railroads as a whole were as efficient in 1917 as they are today. I leave it to you whether you are getting better service or worse service than in 1917. It wasn't because the railroads had broken down in 1917 financially, because the records show, and I challenge any man within the sound of my voice to prove to the contrary, that the three-year period selected as the test period, showed a net income greater than any other three-year period, with only one exception, and that was the three-year period including 1907. Just a word about that. That was the time you had the phenomenal increase in business, and the railroads did not keep up their property sufficiently for the demands of the public. The Interstate Commerce Commission, in the advanced rate case, referred specifically to that fact, and said that was no criterion whatever as to what constituted a reasonable return. Since 1907 the railroads have been compelled to include additions and betterments out of surplus in their investment. These property investments of the railroads are heralded broadcast throughout the country. Will you be surprised to know it is greater than the total outstanding stocks and bonds. It is over $1,000,000,000 greater than the total capitalization, water and all. That is what the railroads are forming a basis on as to what shall constitute a reasonable return in the future. In 1907, the Interstate Commerce Commission said no court or commission would consider as suggesting in a remote degree, either the present value or the original cost of the American railroads. Yet all the property investment is still in that investment. I have another term for that; I call it book value. I wish you would remember that, and then think how easy it is to arrange your books. The property investment is not a safe index.

Something has been said that the railroads had failed to maintain their properties adequately. You know that was very widely claimed. The other day I went into the law department of the Railroad Administration, and Mr. Matthews gave me this memorandum:

"UNITED STATES RAILROAD ADMINISTRATION,

"W. G. McAdoo, Director General of Railroads.
"Division of Law; John Barton Payne, General Counsel.

"Washington, January 27, 1919.

(Memorandum for Mr. Clifford Thorne.)

"Mr. Matthews stated today that as near as he could recall, at least fifty claims have been preferred by different companies for compensation in excess of the standard return based on the claim that the company had expended an abnormal amount of money during the test period for maintenance; that most of these claims have been acted on by the Railroad Administration already; that some are still pending and under investigation; and that of the claims of this character finally acted on, none have been allowed.

"Accompanying this memorandum is a list of a few companies of this character, selected at random, showing the amount of the claims made by them.

"The above statement does not apply to claims for excessive equipment purchased during the test period. There are about fifty or more of these."

The Rock Island now claims they were over-maintaining their property to the tune of $1,500,000 a year during the three years ending in 1917. The Chicago and Eastern Illinois claim an over-maintenance of $600,000 a year. The Frisco claimed they were over-maintaining their property by $1,500,000, and the Missouri, Kansas and Texas claimed they were over-maintaining their property by $1,000,000 a year.

I have merely given you these figures to show you that it is owing to what you are trying to put over. Now, if all these facts be true, what caused that billion-dollar increase in rates last year? Well, you had the wage increase, the totals including many advances during the last six months, and which now totals, I am informed, between $700,000,000 and $800,000,000. You had an increase in coal of $140,000,000. You had other increases; and it was because of these increases that Mr. McAdoo made the advance. He specifically said those were the reasons, and it was not to make up for a deficiency existing in the years before. The average wage increase in labor on the railroads has been close to 40 per cent. You only had the rate advance six months of the year, while you had the bulk of the labor advance twelve months of the year.

The British government adopted the policy of not making any advance in rates to take care of the extraordinary war expenditures occasioned on the railroads of that nation. In this country you have been hauling soldiers and sailors for less than cost. Is it right that a relatively small group of shippers have to absorb the difference and can not pass them on, to bear the cost of the soldiers' and sailors' transportation? Shouldn't it fall on the country as a whole? Isn't it a legitimate part of the general war policy of the United States government?

Again, you have had congestion at the terminals in order to permit the exportations, transportation of troops and munitions. You have had to build extra terminals in order to expedite the movement. I do not believe you will be called upon to pay the deficit of the past year. As to the future, I do not know what will develop; you and I can not tell. If business falls down, the railroad rates may advance. If business revives after a short period, then we can expect normal conditions again. If the volume of traffic is equal to that of last year, the present rates should be sufficient to take care of the situation, and no general advance in charges should be made upon the American people. It took about six months or a year after the Civil war, and a year after the Napoleonic war, to get back to normal conditions. People have to eat and have to have clothes, furniture, equipment. I think that industry will get back to a normal basis, but we can not expect wages to decline to take care of that.

In the face of the situation as I have described it, it is not fair for any man to make the claim that regulation has been hard on the railroads. As a matter of fact, the average rate on all the outstanding stock at the close of thirty years of regulation was practically twice as great as the average rate at the beginning of that period of regulation in 1890.

At the present moment there is pending before congress some legislation as to the future disposition of our railroads. It will be impossible for us to determine what policy should be adopted inside of six months or a year from this time. The transportation question is going to be one of the greatest issues before the American people in the next twelve months, and will be discussed in the magazines, newspapers and halls of congress. During this period of discussion, it is of absolute, supreme importance that we immediately restore the powers of the courts and commissions over the common carriers of the United States.

I am going to make three statements that are rather strong, and I want you to follow them, and I am going to prove they are true:

First, the Director General of Railroads has defied the state and federal statutory provisions and the common law of this nation, and has acted in disregard of what the law says.

Second, the Director General has proposed and is now proposing general sweeping advances in charges for the shippers in this country to pay, without a semblance of hearings before a disinterested tribunal.

Third, the Director General has proposed and is now proposing revolutionary charges in rate relationships without a hearing before a disinterested tribunal—changes that will disturb the American industries of various kinds throughout the country.

How has the Director General defied the law? The day after the armistice was signed, in November, 1918, Mr. McAdoo issued General Order No. 57, which was as follows:

"UNITED STATES RAILROAD ADMINISTRATION

"General Order No. 57.

"Claims on grain shipped in bulk constitute a large proportion of loss and damage claims. Some of the widely varying practices of both shippers and carriers with respect thereto are of doubtful propriety, and in many cases result in undue preference and unjust discrimination.

"This condition may be attributed largely to the great number of intricate factors entering into the grain business; the condition of scales and weighing practices, which, in many instances, result in weights of doubtful accuracy. Grain in bulk is sometimes loaded at large terminal elevators, where so-called official weights are obtained; in other instances, at country elevators, where weights are obtained on small scales in many drafts, and in other instances where scale weights are not used, but loading weights otbained on measurement basis; and at some points, where no elevators are located, grain is weighed over wagon scales, loaded into cars, and the sum of the wagon scale weights used to represent the amount shipped.

"Destination weights are arrived at in as many different ways as the loading weights, but, as a general rule, the bulk of the grain shipped is destined to terminal markets, where official weights are secured, and the differences between these loading and destination weights constitute the basis of claims, although losses resulting from the taking of samples for inspection purposes and the failure of consignee to unload all the grain and other wastage, over which the railroad has no control, are not taken into consideration or accounted for.

"In view of the foregoing, there is no good reason why carriers should assume responsibility for claims, the basis of which is solely the difference between these loading and out-turn weights.

"Therefore, claims for loss of bulk grain will be recognized only where there is evidence of negligence on the part of the carriers. Leaks due to improper coopering of cars or placing of grain door boards are not to be considered as evidence of negligence on the part of the carrier, and the following rules shall apply until superseded by others that may be adopted as a result of investigation and study of the subject now being carried on by carriers and shippers in connection with the Interstate Commerce Commission.

"At the present time there is lack of uniformity in the disposition of grain claims. One purpose of these rules is to clear up this present situation and dispose of promptly such claims as come within these regulations.

"Rule 1—Selection of Cars for Loading—Suitable cars will be furnished for bulk grain loading. (See definition.) Definition—A suitable car for bulk grain loading is one that is grain tight and fit or can be made so by the shipper at time and place of loading by ordinary and proper care in use of cooperage material and by a reasonable amount of cleaning.

"Rule 2—Rejection by Shipper—While carriers are expected to furnish suitable equipment, it is the duty of the shipper to reject a car which is unfit for the loading intended.

"Shippers should not load bulk grain in a car with door post shattered or broken, or with other defects of such character as to render car obviously unfit, or with inside showing the presence of oil, creosote, fertilizer, manure, coal or other damaging substance of like or kindred character.

"Rule 3—Cooperage—Grain doors or grain door lumber of proper quality and dimensions will be furnished by the carrier and installed by the shipper to cooper side and end doors and other openings of cars used for bulk grain loading.

"Note 1—Carrier's agent at loading station will ascertain the number of temporary sectional grain doors, or the number of feet (board measure) of grain door lumber used to cooper the car, and the approximate weight thereof, and note same on way-bill.

"Note 2—Should the carrier's supply of grain door material run short, local agent will promptly notify his superintendent, who will immediately send the required material or authorize local agent to purchase a supply to take care of the emergency.

"Note 3—Shippers or consignees must not appropriate carrier's grain doors or grain door material, neither shall they use the same without specific authority from the carrier.

"Accessories, such as nails, paper, cheesecloth, burlap or similar material for calking or lining cars, reuqired to prevent loss of grain by leakage, shall be supplied by the carrier and applied by the shipper or at his expense.

"Rule 4—Consignor, Consignee or Owner Required to Load and Unload Carload Freight—Except as otherwise provided by tariff, owners are required to load into or on cars grain carried at carload ratings, and consignee or owner is required to unload the car, which includes the removal of entire contents, including sweeping of the car. Loading includes adequate securing the load in or on the car, also proper distribution of the weight in the car by trimming or leveling.

"Rule 5—Shipping Weights—Where shipper weighs the grain for shipment, he shall furnish the carrier with a statement of the car initials and number, the total scale weight, the type and house number of the scale used, the number of drafts and weight of each draft weighed, the date and time of weighing, and state whether official Board of Trade, Grain Exchange, state or other properly supervised shipping weights; also state number and approximate weight of grain doors used. This information shall be furnished as soon as practicable, forwarding of car not to be delayed for this record.

"Rule 6—Destination Weights—Consignee shall furnish the carrier with a statement of the car initials and number, the total scale weight, the type and house number of the scale used, the number of drafts and the weight of each draft weighed, and date and time of weighing, and state whether official Board of Trade, Grain Exchange, state or other properly supervised unloading weight.

"Rule 7—Leakage or Damage Record—If damage to or leakage of grain is detected while in carrier's possession, the necessary repairs must be made to prevent further loss or damage, and a complete record made thereof. In case of a disputed claim, the records of both carrier and claimant on said car shall be made available to both parties.

"If shipper, consignee, owner or his or their representative should discover leakage of grain from car, he must immediately report the facts to carrier and afford reasonable opportunity for verification.

"The result of hammer testing will not be accepted as proof of loss.

"Rule 8—Claims on Clear and Defective Record Cars (a) Clear Record Cars—If, after thorough investigation by the carrier, no defect in equipment or seal record is discovered, such record shall be considered to show that the carrier has delivered all of the grain that was loaded into the car. If evidence is produced by the claimant indicating a defective record, such evidence shall be investigated and given due consideration.

"(b) Defective Record Cars—Where investigation discloses defect in equipment, seal or seal record, or a transfer in transit by the carrier of a car of grain upon which there is a difference between the loading and unloading weights, and the shipper furnishes duly attested certificate showing correctness of weights, and the carrier can find no defect in scale or other facilities, and no error at points of origin or destination, then the resulting claims will be adjusted subject to a deduction of one-eighth of one per cent of the established loading weight as representing visible loss and wastage.

"Note—Transfer in transit, as referred to in Section (b) of this rule, is a transfer for which the railroad is responsible, and not a transfer because of a trade rule, governmental requirement, or because of orders of consignor, consignee, owner or their representative.

"(c) Leaks over or through grain doors, and other leaks due to improper coopering by shipper, shall not be considered defects for which the carrier is responsible.

"W. G. McAdoo, Director General of Railroads."

You will have to prove a railroad negligent in order to recover a claim. One of the fundamental principles of law is that you have to prove the negligence of the bailee; but the courts have said that common carriers occupy a different relation than the ordinary bailee to the bailor. The shipper loses custody of his cattle or commodity; he can not follow it as though it was stored locally. Therefore, the courts have said that it is not necessary that the shipper prove negligence of the carrier, and all the shipper has to prove is that he tendered the goods at the point of origin and didn't get them at the point of destination. That principle is thoroughly established by scores of decisions. Nobody questions the validity of that legal proposition, and yet here comes Mr. McAdoo, after the armistice is signed, and solemnly declares they are not going to pay losses on grain unless the shipper proves negligence on the part of the carrier. I claim that General Order No. 57 is illegal, and I do not think there is any man who will question the soundness of my statement.

Again, Mr. McAdoo made an order for manufacturers and industrial plants, if an industry had built a track to a certain part of the road, that the industry would have to maintain it, and the railroad would own it, Perhaps someone may think I am stretching that a little. Here it is:

"Generally speaking, the industry shall pay for and maintain, and the railroad company shall own that part of the track from the clearance point to the right-of-way line."

It was seven or eight months after that order was made when it was changed. Again, Mr. McAdoo made an order that you have got to pay your freight bill within forty-eight hours, or else put up a bond. Would that not be nice for you and me dealing with other folks, whenever we sold anything or performed any service? Imagine Clifford Thorne saying to the Corn Belt Meat Producers: You have got to pay my salary within forty-eight hours, or you must give a bond for it. That is not the way men deal with each other, unless they are despots.

Then another instruction issued by the Director General was that damage claims on live stock should not be paid because your live stock didn't reach the market you were trying to get, if it arrived within twenty-four hours of the time it should get there.

Here is another illustration, on the subject of personal injury claims: "This does not mean that verdicts based upon prejudice or passion shall be paid." Now, after you have had your trial and judgment is rendered and a motion for a new trial denied or not made, you have got your verdict, the Director General reserves the right to determine whether the verdict was granted under passion or prejudice—a department of the government superior to our courts, the common law and the statutes.

I am going to show you where, in effect, he repealed the Carmack amendment. He was not modest in his efforts; sometimes I think the kaiser is jealous of McAdoo; the "crown prince" of this country made one mistake when he took over the railroads.

One portion of the Carmack amendment provided when you bring a case for loss and damage, for instance, against the originating carrier, you do not have to prove when the loss occurred, but that carrier may look to the subsequent carriers. Now that was for the protection of the shippers of the country against a situation that had become almost intolerable. Congress said: It will not be necessary to prove where the loss occurred, if you sue the originating carrier. Along comes Mr. McAdoo and issues an order that hereafter, when you begin a case against the railroads, you must begin where the loss occurred, or else where the plaintiff resided at the time the action accrued.

What is the practical effect of that? If you didn't live within the jurisdiction of the court where the shipment originated, you couldn't bring the action against the originating carrier, unless the loss occurred there. Suppose it is a damage case, for delay, and the shipment moved to New York, how are you going to prove where it occurred? Suppose it was a case of theft, how are you going to find where it occurred on that journey?

Many people say that order is not valid. In fact, a judge of the supreme court of New York last Saturday issued an injunction or made a finding in some case involving loss and damage, in which he held that order was invalid, as determining the jurisdiction of the state courts of New York. But here is another judge in St. Louis issues an opinion in which he says that order is valid.

I do not claim that Mr. McAdoo is dishonest, or has not the ability, or is not a man of good character. He is a delightful man personally. I am told that he is a man of unquestioned integrity and great ability. I think he has made the same mistake Brother Taft made. You will remember, Dolliver said on the floor of the senate that Taft was a good man, but he was surrounded by good and able men who knew what they wanted.

Mr. McAdoo, when he came to treating with the railroad labor, didn't invoke the supreme war power of the government to determine what wage labor should work for. He created a disinterested tribunal, composed of a member of the cabinet, a member of the Interstate Commerce Commission, and one or two other gentlemen. When he came to dealing with the railroad bond-holder and stock-holder, he didn't invoke the war power of his government. He left the determination of contested matter in regard to the compensation going to the railroads to a board of referees appointed by the Interstate Commerce Commission. If their findings were not satisfactory to any railroad, that company would still have the right to go to the court of claims. But when it came to the determination of questions affecting the pocketbook of the shipper, Mr. McAdoo provided committees to hear the evidence, and without one exception the majority of every one of these committees were railroad men. Mr. McAdoo would not have dared to leave the question of compensation of labor to a committee the majority of whom were railroad men. I think the great mistake Mr. McAdoo made was in not surrounding himself equally with shippers and railroad representatives. If he had done that, the situation might have been far different than that which exists today, with reference to the attitude of the American people toward government operation.

Today, Mr. Walker K. Hines is Director General, and all of his staff except one are railroad men. These railroads have been operated by a group of railroad men, and they have had such supreme power that they have ignored the courts, commissions and statutes. That is what we have had to compete with.

Sweeping changes are now being proposed. At the present time they propose a set of class schedules throughout the west and southwest, disregarding existing groupings of towns and cities. This is merely tentative; the Director General has asked for the advice of the Interstate Commerce Commission. Hs is also proposing an advance in switching at terminals. He is also proposing to put into effect on the 15th of February an advance in storage charges, from 5 cents per ton per day to 40 and 50 cents per ton per day, and it has never been submitted to any disinterested tribunal for a hearing. Consolidated Classification No. 1 has had some hearings before the Interstate Commerce Commission, but the commission hasn't had power or authority to hold that up, if the Railroad Administration desires to put it into effect. After it goes into effect, you can file complaint and get relief. That involves 10,000 changes.

Now, I insist that we must not run the chance of having some revolutionary changes put into effect between now and the time you determine what shall be the ultimate disposition of the railroads. During that interim we have the greatest danger to the American shipper, because the railroads will realize that the termination of their control is probably close at hand, and what they want put in effect, they should do so without delay. Senator Cummins has offered an amendment striking out of the law, "except where in conflict with the orders of the President." That is th eclause that is so often invoked to over-ride acts of congress, the states and decisions of courts.

I am afraid I may leave a very wrong impression on your minds. I do not want you to feel that I am wholly hostile to the Railroad Administration and its official staff. If I leave that impression on you, I will be unjust to myself and very greatly unjust to the members that constitute that staff. The Director General and his official family have shown universal courtesy, without any exception, in every matter that we have presented. There has not been the slightest indication of bad faith or lack of integrity or lack of ability at any time during the past year. The reason that I have recited these facts as I have is that I concede that I am an advocate, and I want certain changes in the law, just as quickly as possible, for the protection of the shippers whom I represent. Many acts have been done by the Railroad Administration which were fair and just. Last year an order was made by the Railroad Administration, providing on live stock an advance which should only be 25 per cent, with 7 per cent as a maximum. The administration also had under advisement the $2 spotting charge. Advance information leaked out, and protests by letter and telegram went into Washington, and the proposal was withdrawn. A few weeks ago the railroads issued an order causing a 2-cent advance in rail rates on grain from Chicago and St. Louis to the east, affecting both local and re-shipping rates, and on our protest that was withdrawn, pending further investigation. This General Order No. 57 that I have attacked was issued the middle of last week, and we proposed amendments to that, and the Railroad Administration stated they would give us a definite answer within ten days. If that order is withdrawn, it will be an act of wisdom on their part.

Mr. J. L. Harris, chairman of the Live Stock Committee of the United States Railroad Administration, was approached by your counsel, and it was stated to him that you had not received nearly as good train service under the conditions of the past year as prior thereto, and without hesitation he said: "I will be glad to go out there and give the stock shippers of Iowa an opportunity to present the situation as it exists, and I will do all in my power to correct it." And I want to tell you further that I have personal knowledge of certain acts of Mr. Harris which entitle him to the confidence of every stock shipper in this room. He is straight as a die. It is not his policy to make the Railroad Administration a burden on the people. We must remember, we have been engaged in war, and there has been a war emergency such as we have not had since the Civil war, demanding the most superhuman tasks. All we ask, now that the war is over and the emergency has passed, is that we want the immediate restoration of normal peace conditions, just as quickly as that can be safely accomplished.

Mr. Harris' committee has laid down a number of subjects for investigation, in which it is proposed to change and make more uniform regulations affecting live stock transportation. They are as follows:

"Cleaning and disinfecting; feeding charges; attendants in charge; uniform health bill and method of handling; furnishing two singles in lieu of one double; stocker and feeder rules; transit privileges; market or reconsigning privileges; feed charges absorbed; stopping in transit to complete loading; terminal charges, such as trackage and switching; loading and unloading charge allowance; yardage charges on transit stock; live stock to and from prepay stations; bedding charges and proper feeding; weighing live stock moving between country points; stopping sheep in transit to fatten and shear; hoof weights and shrinkage allowance; live stock contracts; ordering and furnishing cars, and inspection of cars; mixed shipments and loading of same; uniform live stock way-bill and way-billing, information to be shown; slatting and papering cars, building and removing partitions; dipping live stock in transit; shipping instructions to be given in writing; concentration singles inbound, doubles out; back or out-of-line haul; furnishing cars of different lengths from those ordered by shippers."

At the present time the rules and regulations covering these various subjects differ throughout the country, without any reason for the same. There may be a justification for making them more uniform and just, as between shippers of different localities, but when these changes are being made, it is up to you to be on hand at every stage of the proceedings, to see that the shippers' rights are safeguarded at every one of these hearings, and without doubt the friends of the railroads will be represented by their ablest men.

You must be present this afternoon, and you must give Mr. Harris concrete definite facts, where the train service was unfair before the war and afterwards.

I do not want you folks to go away from here with the idea that I am wholly antagonistic to the Railroad Administration. There are some admirable men on those committees. Mr. Chambers and the traffic committees are men of integrity, honor and capacity. They have always treated me with absolute courtesy. They have made many changes in rates, rules and regulations that were ordered last year that were unwise, at the request of shippers. I think they have honestly endeavored to do what they thought was right, and I know they have given relief in scores of cases; but, like everybody else, they are human. You can't make angels even out of railroad men. You can't expect them to forget the bias that would naturally occur after spending a lifetime in the employ of railroads. That is my principal objection. I simply want to have these questions and controversies, wherein the rights of the railroads and the shippers are involved, decided before disinterested tribunals, and not before a partisan board.

Some changes are going to be brought about. You and I can't tell what they will be. The upsetting of dynasties in Europe, the great world war, have forced upon us some big issues and have made us think over questions with a new viewpoint.

I do not want to make you think that I believe the railroad question is the only question for us to consider at the present moment. We are witnessing some tremendous events of stupendous importance in world history, and we are witnessing some scenes most dramatic and interesting. One of the most thrilling that I have ever witnessed was a few weeks ago, when for the first time I saw a mother greeting her boy just coming back from overseas. She clasped the boy in her arms at the depot, kissed him half a dozen times on each cheek, hugged him. Back home at last! The boys are coming back from that great struggle over there. Some of them aren't coming back. There are vacant places in the family circles here and there, but those boys have made the supreme sacrifice for one of the greatest achievements of our generation.

When you look at that good old flag, have you ever realized what it has cost? It is the symbol of our national life from 1776 down to the present time. First we fought for freedom from the British; then we fought to give freedom to the slaves; then we fought to give freedom to Cuba; now we have fought for world democracy. Through it all is that thought and theme of liberty. America and Liberty stand synonymous throughout the world. Franklin K. Lane, Secretary of the Interior, made the most beautiful tribute to our flag I have ever read, and I am going to close my remarks by reading that statement by Mr. Lane:

"MAKERS OF THE FLAG.

"This morning, as I passed into the Land Office, The Flag dropped me a most cordial salutation, and from its rippling folds I heard it say:

" 'Good morning, Mr. Flag Maker.'

" 'I beg your pardon, Old Glory,' I said; 'aren't you mistaken? I am not the President of the United States, nor a member of congress, nor even a general in the army. I am only a government clerk.'

" 'I greet you again, Mr. Flag Maker,' replied the gay voice. 'I know you well. You are the man who worked in the swelter of yesterday, straightening out the tangle of that farmer's homestead in Idaho, or perhaps you found the mistake in that Indian contract in Oklahoma, or helped to clear that patent for the hopeful inventor in New York, or pushed the opening of that new ditch in Colorado, or made that mine in Illinois more safe, or brought relief to the old soldier in Wyoming. No matter! whichever one of these beneficent individuals you may happen to be, I give you greeting, Mr. Flag Maker.'

"I was about to pass on, when The Flag stopped me with these words:

" 'Yesterday the President spoke a word that made happier the future of ten million peons in Mexico; but that act looms no larger on the flag than the struggle which the boy in Georgia is making to win the corn club prize this summer.

" 'Yesterday the congress spoke a word which will open the door of Alaska; but a mother in Michigan worked from sunrise until far into the night to give her boy an education. She, too, is making the flag.

" 'Yesterday we made a new law to prevent financial panics, and yesterday, maybe, a school teacher in Ohio taught his first letters to a boy who will one day write a song that will give cheer to the millions of our race. We are all making the flag.'

" 'But,' I said, impatiently, 'these people were only working.'

"Then came a great shout from The Flag:

" 'The work that we do is the making of the flag.

" 'I am not the flag; not at all. I am but its shadow.

"I am whatever you make me, nothing more.

" 'I am your belief in yourself, your dream of what a People may become.

" 'I live a changing life, a life of moods and passions, of heartbreaks, and tired muscles.

" 'Sometimes I am strong with pride, when men do an honest work, fitting the rails together truly.

" Sometimes I droop, for then purpose has gone from me, and cynically I play the coward.

" 'Sometimes I am loud, garish, and full of that ego that blasts judgment.

" 'But always I am all that you hope to be, and have the courage to try for.

" 'I am song and fear, struggle and panic, and ennobling hope.

" 'I am the day's work of the weakest man, and the largest dream of the most daring.

" 'I am the constitution and the courts, the statutes and the statute makers, soldier and dreadnaught, drayman and street sweep, cook, counselor and clerk.

" 'I am the battle of yesterday, and the mistake of tomorrow.

" 'I am the mystery of the men who do without knowing why.

" 'I am the clutch of an idea, and the reasoned purpose of resolution.

" 'I am no more than what you believe me to be, and I am all that you believe I can be.

" 'I am what you make me, nothing more.

" I swing before your eyes as a bright gleam of color, a symbol of yourself, the pictured suggestion of that big thing which makes this nation. My stars and my stripes are your dream and your labors. They are bright with cheer, brilliant with courage, firm with faith, because you have made them so out of your hearts. For you are the makers of the flag, and it is well that you glory in the making.' "

The President: At this time we will proceed to take up the question of railroad service with Mr. Harris. He is chairman of the Live Stock Committee appointed by Mr. McAdoo to look after the interests of the live stock men as far as possible. He comes from Washington at the request of Mr. Chambers, who is a member of Mr. McAdoo's board—now Mr. Hines' board. I take pleasure in introducing Mr. Harris.

Mr. Harris: Mr. President and Gentlemen: I am glad to be with you today, especially in view of the fact that you represent and live in the state which produces more meat and more corn than any other state in the world.

I am not going to endeavor to make a speech. I am going to tell you a few little things, and then I would like to proceed with the complaints you perhaps have against the transportation companies. Our very good friend, Mr. Thorne, is responsible for my being here, and I want to thank him for his efforts in bringing me out here.

The railroads were taken over largely, as we understand it, to win the war. We have won the war. But while they were taken over for the purpose of winning the war, moving the traffic, I realize the schedules for handling live stock and other perishables were lengthened and reduced from 18 to 20 miles an hour to 12.5 miles per hour. And by reducing these schedules, you would be 24 hours late from your station to the market, thus increasing your expense in wastage and shrink.

Now that the war is over, it seems that better service might be offered. I might say that the revenue of the railroads has decreased since the armistice from 12 to 20 per cent. The live stock markets have increased during the past year very materially. As a matter of information, I want to say that the increase at Kansas City, Chicago, Omaha, St. Louis, St. Joseph, Fort Worth, Oklahoma City, Wichita and Denver, in cattle, has been 1,490,000 head, or 10 per cent; the increase in hogs was 3,902,000 head, or 20 per cent; in sheep, 1,243,000 head, or 10.5 per cent; in cars, 106,474, or 13.31 per cent. As a whole, the increase in heads, not counting calves, has been a little over 6,000,000.

So you can readily see the heavy live stock moving to help win the war last year was quite a burden upon the railroads. It also burdened the stock yards at various points, and I think I can truthfully say, after speaking personally with a great many of the railroad agents and employes, it was due to the lack of the old-time spirit of competition. Due to the territory, it has been most important to keep from bunching live stock, which ordinarily has been responsible for depressed markets, and yet we all feel like shipping on the day we have been accustomed to. I have studied the situation very thoroughly, and have discussed the matter with the stockholders of the packing houses and other interests, and it seems the only thing to do at this time with the live stock receipts, is to do what has been done, create zones and endeavor to have a five-day market rather than two or three days. It has further developed, in bringing to you the zone system, that some of the days have not been as well filled as they should have been. I think that is only a matter of detail that can easily be remedied by adding to or cutting off the service from the days that have too much or those that have not enough.

I find the terminals at the stock yards have been heavily congested. I find that most of the principal markets, particularly Chicago and Kansas City, to which the majority of the stock is now moving, the roads are endeavoring to get into their stock yards around 5 to 7 o'clock. As an illustration, you take from 1,000 to 2,500 cars arriving at a market point loaded with live stock, many of the cars having partitions for all classes of stock, and being only able to unload around 200 to 250 cars per hour, you can not unload 2,000 or 3,000 cars of stock in two or three hours' time. You gentlemen know that every car that is unloaded at the stock yards must be counted out of the chutes and delivered to some commission man's division for sale. You no doubt understand that each car as it is counted out has to be inspected by a representative of the Bureau of Animal Industry, and if not inspected as taken out, it must be inspected before it is sold. Now, if it takes all this to complete the transaction, and stock usually arrives at a market at about 5 o'clock in the morning, and they can only unload from 200 to 250, and at the greatest number 300 cars per hour, then you can see, with 2,000 cars per day, you are unloading your stock all through the day. In fairness to the packers and everybody else, I want to say we have just looked over the unloading receipts at the Union Stock Yards, and find that from 7 to 10 o'clock in the morning the average unloaded is from 33 to 35 per cent, and at noon in the neighborhood of 50 per cent. Therefore, as long as receipts arrive and are unloaded as late as noon, and from that up until 6 o'clock, you can see where the railroad stock yards are working to disadvantage. It very frequently happens that stock coming in in the evening and afternoon is interfering with the outbound business which moves from the same alleys and same chutes and is loaded on the same platform, in many cases, as the inbound. You have got to get out of the way with the inbound to take care of the outbound, or vice versa. Stock coming in the morning or evening has to be fed, and the force of men is not adequate to take care of both.

The Bureau of Markets, in my opinion, has been of very great help to the shipping public, and is just beginning to get started, and, in my judgment, their work will be more effective in the future than it has been in the past. The supervision of the Bureau of Markets will grow and develop in a short time to where you will begin to see, feel and realize what it is worth.

There should be a solution to the late arrival of live stock at a market point, and before we commence our discussion, a little later, I will give you what I think of it and what I recommend, and what was accepted at Kansas City. It seems where receipts are running as heavy as at this time, the first train should arrive at the stock yards chutes at 10 p. m., and they should continue constantly arriving and unloading until 6 or 7 a. m., and by such a method your stock will be unloaded, fed, watered and sorted, ready for sale, at 8 a. m., when the market opens, and if that should be brought about, there could be no excuse for the packer not coming out at 8 o'clock, endeavoring to commence his sales at that hour. It would eliminate all excuses from the commission men and the buyer not having an opportunity to try to sell his stock on the day in which it is intended for market. Claims are usually based in many cases on late arrivals. In many cases claims are presented because they arrived too late to have the benefit of the early market.

I personally realize that the live stock shippers of today, as a whole, want service and not claims, altho many railroads say the shippers are unfair and unreasonable, and are looking to see how much they can get back from the railroad before they make their shipments. I want to say I do not believe any such stuff as that, because I have farmed and bought live stock, and have represented the railroads for thirty years, and during four years I was general agent of the Union Transit Company of Chicago. I only mention that because I want you to know that I have had some experience along the various lines I am now trying to represent the people in thru the United States government.

I want to say something about the eastern stock yards. As chairman of the special live stock committee, I have conducted investigations in Pittsburgh, Baltimore, Buffalo, New York, Philadelphia, and Lancaster, Pa. The latter, Lancaster, is considered the greatest live stock producing county in the United States. I don't know that that is true. They have a market which is owned by the Pennsylvania Railroad, and leased to individuals. They have built up a stock yards business that amounts to over 7,000 cars per year. It is all due to the rate-making of the Pennsylvania Railroad. Live stock is permitted to move from Chicago or west of the Mississippi river, billed to Lancaster, and Lancaster is in the big rate-making territory, possibly 150 miles square. Live stock can move within any of that territory by paying a $2 reconsigning charge. At the rate originally made from the point of origin to Lancaster it is bought by speculators and packers and feeders and shipped to Philadelphia, plus the $2 reconsigning charge, and to New York City, about 150 miles away, for only about 2 cents greater than the Lancaster rate. It may go in any direction at the Lancaster rate. However, when it is fed, it goes on to its final destination, whatever that may be, at the local rate.

In 1917, there were over 30,000 cattle fed in that one county. The average number of cattle fed by each farmer was estimated at eight head. The production from the county which the farmers realized from sale was over $30,000,000. The commission charged the shipper, either buying or selling, it $1.25 per head, with a minimum of $30 per car on cattle. I might say that in the Baltimore market the commission charges are based on the percentage, and run about $31 per car, and the highest, on double-deck hogs, runs $74 per car. I am sure some of this is information to you, because I didn't know it until recently, and I have spent a great deal of my time in the east, trying to get business over the railroad I represented from Chicago and Kansas City and the western markets.

I feel that you gentlemen should know another thing. The railroads of New York absorb, make an allowance of, 3.5 cents, which is included as unloading and yardage and lighterage charge. All live stock arriving, with little exception, has to be lightered. On sheep the railroads allow 8 cents per head, to include the same service. On calves an allowance of 10 cents per head is made. You can see that the railroads are very generous to the eastern markets as against the western markets. However, these charges I refer to only apply to Lancaster, Baltimore, Philadelphia and New York. All the commission charges will net to the commission men an average of $30 per thousand. The feed charges in the east are very much higher per car and per hundred than in the west, due, of course, to the higher prices paid at these points.

It occurs to me that now is a very great and opportune time for the shippers of Iowa, as well as of the entire west, to press their demands upon the carriers for better service, more uniform, with a greater degree of regularity. I know you have gone thru some very trying times without complaining and without finding faults, and Mr. Thorne, in his remarks this morning, has told you a great many things in which I agree, and I fully believe that now is the time for co-operation. The shippers, the railroads, the stock yards, should all co-operate together; we should be partners. I think I might go one step farther, and include the packers, because one without the other can not exist. If you couldn't find a market for your live stock, you wouldn't be in the business very long. If the packer couldn't find live stock to buy and slaughter, he would have to go out of business; and that is also true of the stock yards.

It is safe to say that the number of increase of heads of live stock moved by the railroads in the United States in 1918 was over 7,000,000 more than in 1917, and I am inclined to think this year will still show an increase over 1918. If that is true, we realize where the stock is twenty-four hours off the market longer than it should be, that your natural shrink of the hog will run from three to four pounds, and on cattle from fifteen to twenty-five pounds, and on sheep it will run about three pounds. Therefore, if you will figure the total per head shipped and the great omount of shrink that follows the lengthened schedules, you can well afford to pay almost a double freight rate.

The President: Before we open this public hearing to the house, I am going to ask Mr. Wallace, who has secured a number of reports from shippers and farmers over the country, to at this time make a statement and present some of these reports to Mr. Harris and the convention.

Mr. Wallace: I want to say to you, Mr. Harris, an behalf of our people gathered here, we are grateful to you and very appreciative of the fact that you have come out here. Now that you are here, we want to make you understand, and thru you the people you represent, how grievously we are injured by what we feel is negligence on the part of the carriers.

Now, Mr. Harris, when we learned you were coming, I took up this matter to get it into concrete form to present to you. I have got on these pages reports from thirty-six different counties in this state, and from shippers over eight different railroads. This report, which I will hand to you, shows that the shipping time from Iowa points to Chicago has increased from five hours to a week. It shows, almost without exception, that from any point from the central part of Iowa west, the increase has been from ten to thirty-six hours. These are not exceptional cases; they are the usual thing. I have here also the figures showing the increase in shrinkage, and I think this presents the situation.

In addition to this, I have eight or nine pages of specific statements of men in their respective localities, in which they tell just what is happening to them. We have cases where men couldn't get cars for a month or six weeks. We have instance after instance where men were compelled to hold stock in the local stock yards, and in many instances exposed to the weather. I have no doubt there are plenty of men who can give you points of that sort from their own experience.

As long as the war lasted—if I correctly interpret the men in this room—we were willing to get along the best we could and bear our share of the burden. But now we are getting adjusted to peace times, and on behalf of the 200,000 farmers of the state of Iowa, we feel this thing has got to stop. This not only on our account, but on account of the people of the state and of the United States. It discourages live stock raising, and increases the robbing of the soil. With us, we have got to the point where it is not a question of why, but it is a question of remedying the situation, and we feel that we have a right to demand from the Railroad Administration a thoro, efficient administration.

We hope that in the short time you are with us, you will be able to call out enough of these men, and you can go to any part of the room and find men with knowledge of the situation, and so satisfy yourself, and with your very real weight make the people back there feel that something must be done.

The President: Now, gentlemen, we are going to turn this over into a somewhat informal hearing. Mr. Harris has not come here to listen to petty grievances, and in presenting your grievances we want something real and definite, and something worth while. I think I will ask Mr. Eisele to make a statement to Mr.

Harris. He perhaps ships as much stock over the Iowa railroads as anyone here.

Mr. Eisele: I have three things to present. I will touch on shipping in stock cattle. I shipped six loads of cattle last August from Kansas City to Grinnell, Iowa, over the Milwaukee and the Minneapolis and St. Louis. They arrived at Grinnell in thirty-four hours, were unloaded and fed at Oskaloosa, and were fed $7 worth a car. It has been the same way over other roads. I have shipped from Dakota.

Many of us are old men. We are allowed a pass to Chicago to ride with our cattle, and I believe the courts have decided that we must ride with our cattle to get a return pass. It seems that we must ride in the caboose. I have been in those cabooses when there were thirty others trying to ride to Chicago. I would willingly have bought a ticket, but in buying my ticket I annulled my transportation home. I have seen men sleep on flat cars when they could not get in the caboose, especially on the Rock Island. It may not be so bad on some other roads, but it is so on the Rock Island.

Now, about the service. I do not think our service was worse last year than it was the year before. You were handicapped last winter a year ago on account of snow. But I think our service has been about the same for the last three years, only that the time has been lengthened out about eighteen months ago from six to twelve hours.

Now we come to the loading proposition. As long as the war was on, we didn't say anything. But it seems to be a matter of fact that whatever the dispatcher—whose name is "Jack"—says, goes. If you ask the agent when you can get a car, he will say: "We will take it up with Jack." Jack won't let you know until it is almost too late, and then we work that afternoon and night to get the cattle in the stock yards. I believe this is a fact all over Iowa where there is no night operator; there is no way of knowing during the night when the train is going to come.

One cold night last winter my son and I went down and loaded two cars of cattle for Chicago. It was 20 below zero, and I let my boy go home, as I was going with the cars to Chicago. Thinks I, how am I going to find out when the train is coming? And I walked that track until 7 o'clock the next morning, waiting for the train. I was like the fellow who had the bear by the tail; he dare not let loose, nor could he hang on. Then on the way to Chicago we had to carry sixty cars of dead freight, with twenty cars of stock, and they never get in with them. How can a crew make a note of each station on twenty cars? Blue Island is our terminal. I have seen cars unloaded and put into the train at Sylvis. "Yes, sir, your stock is on this train." You will sit there and sit, and finally you ask the conductor what is the matter, and he says he had to set some of this stock out. If you are fifteen minutes short, that man is cut out.

This thirty-six-hour law works less hardships on us men at the point we want to unload them. They load them inside of the limit. I have tried to find out why it was, but nobody could tell me.

Q. How far was that from Malcolm?

Mr. Eisele: Twenty-two miles from Oskaloosa to Grinnell.

Q. It cost you $42.

Mr. Eisele: Yes, sir. I don't know whether they got anything to eat or not. From Sylvia to Blue Island, we do not know much of our stock; we are not with it. I can not see why in the world they don't put a coach on the train, or give us some kind of an emigrant sleeper. The humane society ought to inspect some of these railroads. I would be ashamed if they treated the soldiers in France that way.

The President: Before we proceed any further, Mr. Harris suggests that he would like to have an expression from the convention as to whether they approve or disapprove of the zone system which is now applied to shipments of live stock. The first zone extends out 250 miles from Chicago; the second to the Missouri river.

Mr. Cockerell: I move you that the Corn Belt Meat Producers recommend continuing the zone system, or the five-day market time, by the United States Railroad Administration.

The motion was duly seconded.

The President: Wouldn't it be wise to discuss the whole proposition and then take a vote?

Mr. Philips: I think this subject should be discussed. I have a little something to say about it, but do not want to say that I am opposed to it.

Mr. Ames: Mr. Philips has spoken part of my piece. Mr. Harris has given us a very intelligent idea of the marketing of our live stock. He has explained that fully, how they are handled in the market. To go back: Thirty-five years ago I shipped over the B., C. R. & N., out of Traer, loading there at 4:20 in the afternoon, arriving at Chicago at 6 o'clock the next morning. When the Northwestern Railroad came thru there, in 1900, the time was deferred two hours. We loaded then at 2 o'clock in the afternoon, arriving in Chicago the next morning at 6, in time for market. Later on, I think it was in 1906, the time was delayed until we had to load in the morning at 11:20, and arrived at the stock yards at just about the former time. That was not so bad. But this is what I have to say on the zone proposition: The zone proposition changed entirely the scheduling of stock trains. It took off the assembling trains from our division. We load today at 2 o'clock p. m. in place of 11 o'clock. Our schedule is to arrive in Chicago at 10 p. m., when we do. We run to Belle Plaine, thirty miles, and we lay in the stock yards until we get a train the next morning; we travel all day, and unload in the chutes, and all the trains behind are held on the side track, blocking everything, because they can not get out. You know the situation in Chicago, because every stock train has to come in thru the stock yards, thru the neck of that little bottle.

In regard to unloading the trains: In 1907-08, the Union Stock Yards unloaded 2,250 cars. Every car was unloaded at 8 o'clock in the morning. If they can do this at one time, they can do it at another. This has not been the most clogging run we ever had. In 1886, when all these western cattle were coming in there from the range, there was just as big a run and as big a burden placed upon the transportation companies as there is today. There is no excuse for the transportation company taking forty-eight hours to carry a trainload of stock from the central part of Iowa to the chutes in Chicago, and not to the outskirts of the city.

I think we ought to have a train scheduled in such a way that we can use it economically. For instance, at Mason City, on the Northwestern Railroad, let that train pick up all the stock on that line, irrespective of zone, and take it down to the end of the division, and take that thru train from there to the market. You can run those trains in that way, just as you used to, on passenger schedule time. It does not take such an enormous amount of gray matter to figure out the thing. I think most shippers who ride these stock trains have a reasonable conception of what is expected and what you can expect the trainmen to do for you. We know these things have been done, and that we were not compelled to take twenty-four hours longer, because that is just exactly what it means to ship out of the central part of Iowa.

Now the zone district comes down the Northwestern Railroad and strikes twelve miles north of me. It goes west to Reinbeck, the junction of the Rock Island and the Great Western. The Great Western ships at 7 o'clock in the morning and the Rock Island at 2 o'clock, arriving in the market at the same time. If we are going to regulate the receipts in the market at Chicago, there isn't a much better way than the zone system. The pick-up train is a train that will commence at one end of your division and pick up all the stuff that goes out that day.

Another thing: Four weeks ago last Monday I put in an order for a car for hogs. The car is not here; the hogs have been delayed four weeks, and a few of them are breaking down. I think we have had two cars go out of our station in the last four weeks. I do not think there are but two or three more cars in Tama county that are going to Chicago. Cars have gone to Cedar Rapids, or possibly Tama. When you do that, you take from 25 cents to $1.25 less. Does it look as if the zone proposition was not an equitable distribution of the cars, leaving part of us at least to bear the burden of the breakdowns? My part of the state is not the only one that is having trouble. Take it around Reinbeck and other competition points they seem to be getting cars out. I think an equitable solution of the problem would be to count the hogs to be marketed in every county in the state of Iowa, and let the cars go to those places in regulation, in accordance with the stuff that goes to market. You never can do it in the world so long as you operate under the zone system and confine it to a general line. I will be perfectly willing to take three days in the week, if you will start our trains from the end of the division and run the cars to the main line and put them into a consolidated train. But to be dragged along, shot into this station and that station, all the way along, until you get to Chicago—it is not right. That is what is the cause of broken legs that Mr. Eisele spoke about. The fact of the matter is that the zone system as now operated is not a success, and never will be a success until it is definitely arranged, so that you can get some idea of starting from some definite point and having a pick-up train, consolidating it and coming straight thru. It seems to me the administration should take into consideration these things in the zone system and apply them in some reasonable way.

Mr. Philips: I will give you a little of my personal experience. I am glad Mr. Harris is here. I have known him for a quarter of a century, and he is unquestionably the friend of the stock men. I think I can forecast the report he will make. What I want to do is to get before him concrete facts.

Mr. Harris said they could only unload 300 cars an hour, and if there were 2,000 cars to be unloaded it would take until the afternoon. Let us take him at his word. If that is true, we need more facilities in Chicago, and while you are getting these increased facilities, you suggested beginning to unload at 10 o'clock at night, and schedule the trains so as to arrive there the next morning. We will agree to that. We are the long-haul fellows. You take your Wisconsin fellows and the Illinois fellows and those from Indiana, and all those fellows close by; you get those trains coming in at 10 o'clock at night, and schedule us to get in in the morning at 5 to 6 o'clock, and let us unload, and then give us the thru train my friend Ames spoke about. As to broken legs, the trouble is they are trying to handle too many cars in a single train—eighty cars. Now, when you get to Blue Island, what causes that delay? It is making up that train. If it was a consolidated stock train, there wouldn't be any train to make up.

Now as to the zone system: Creating a five-day market at Chicago is all right, but as my friend said, you hold us to a certain day to be there, but we won't be there. If you will start a train out here on the Missouri river, or the northwestern half of the state, you want to put it on a time schedule so that it will be in Chicago along about 5 or 6 o'clock in the morning. That would help us out. We are the long-haul fellows; that is why we have a grievance.

Now in getting cars to ship to Chicago: Along in December I went to the agent and said I wanted a car to ship hogs on Monday. This was on Saturday noon. He said all right. My hogs were to come five miles from the country. I went home, and on Monday morning we hauled the hogs in, and the agent came up and said: "I don't know whether we will be able to get your car or not." We sat around there until 9 o'clock Monday night. He wouldn't let me ship on Tuesday, and so he let me go on Wednesday. Thursday was a holiday in the yards, and I sold the hogs

Friday. My shipping point is out here at Waukee, on the M. & St. L. and Milwaukee railroads. We have the hardest time getting cars. They say: We have instructions for only so many cars, and there are six or seven fellows ahead of you; and so we go on a week or two weeks. But the local buyers for Indianapolis, Pittsburgh and Des Moines can get cars, and if we take off 25 cents to $1.25 we can sell our stock. Now that is not fair. We want the benefit of this $17.50 market in Chicago. There is no competition, and the railroad agent does not care a tinker's damn whether you ship over the road or not.

We are entitled to some consideration. We put up with all of these things during the war, and we would even walk the track all night at 20 below zero—anything to win the war. Now that we have gotten thru, we are entitled to good service. We want cars. We do not want to sell to the local buyer and lose from 25 cents to $1.25. We plead with you, when you get back to Washington, that you shall give the live stock men some consideration, especially out here a long way from the market, and further than that we expect our old stock train, the pick-up train—and then do not add a lot of dead freight to it. I have run a thousand trains between Rock Island and Chicago just as fast as any local passenger train. If we did that twenty-five or thirty years ago, why can't you do it now? Our engines then were nothing but teakettles compared with what you have today. You are making us pay more freight now than ever before, and we are willing to pay the freight—but give us service, that is what we want.

Mr. White: We have had a great deal of trouble at Williamsburg. The railroad company does not seem to know anything of what they have on their line at all. If you want a stock car, you never know until it is set out at the chute. A man may come and ask for a car, and the agent will tell him he doesn't know when he can get it. The man may not have reached his home yet until he will be called up and told that there are ten cars at the chute.

So far as the zone system is concerned, it seems to me it could be worked out all right. In regard to passes, if they would only provide room it wouldn't be so bad. I remember one time going to Chicago there were twenty-three men in the caboose, and seats for sixteen.

Mr. Robinson. I live 110 miles east of Council Bluffs, on the C. & N. W. I went to Omaha to buy cattle, and there was a rule that orders for cars had to be put in by 2:30, and the cattle lay there until loading time, whenever that may be, often all night and often all the next day. Going out of Omaha, they probably will not put any caboose on the train at all, and you ride on top of your train over to Council Bluffs—sometimes without any light or fire. That has been my experience in the last year, getting stock out of Omaha—all the way from twenty-four to thirty-six hours going 110 miles.

Mr. Cownie: Mr. Harris referred to having a market every day. That is all very well. When I was in the live stock business we aimed to be in Chicago either Monday or Wednesday. We didn't want to be there on Friday, and far less on Saturday. So that it is very difficult with the zone system to arrange to get there Mondays and Wednesdays. I certainly would prefer to be on the market on those days.

One of the speakers said that the trouble with unloading cars in Chicago was the lack of facilities at the stock yards. The profits they make on the business ought to enable them to well afford to double their capacity, so that you wouldn't have to wait quite so long. There are always times when there is congestion. I remember feeding eight or ten carloads of cattle, and a neighbor of mine had the same number. It was a very wet spring, and we held off, thinking the price would go up, and the receipts were enormous at that time. About the middle of May it got warmer and dry, and the skies began to clear off, and there was every indication for a good week for planting corn. My neighbor came to me and said: "John, I believe we better get ready and ship Monday, rather than Tuesday, for Wednesday's market. Everybody wants to plant corn," and he intimated we would be the only ones there. We got in at 6 o'clock in the morning, and it was 5 o'clock in the afternoon before we could get into the yards to unload. It seems everybody thought everybody else was planting corn.

Mr. Harris suggests that the stock should arrive at 10 o'clock at night to be unloaded. I suggest to Mr. Harris in a most friendly manner that he do that with Illinois, Wisconsin and Indiana, and give the Iowa shippers 6 o'clock in the morning.

Mr. Rolfe: I think the zone system is all right, and that the packers should be obliged to put on force enough to handle the stock. We have got to increase the price to the producer or decrease the price to the consumer. That is the only way we can do it.

Mr. Turner: I ordered four cars in December, and I am still waiting for them. We get about two cars a week. But from some stations around on the Great Western, they get five or six cars at a time, and they are shipping them to smaller points. The packers go out and buy hogs for a dollar less, and that is one of the reasons we are shut out.

Mr. Westover: Some time ago I had two cars of hogs delayed on the track all night, and waited until noon the next day. I was unable to move stuff for six weeks. In the meantime I got into the local market at Cedar Rapids. I called up the superintendent of the division at Manilla, to see if he couldn't get me a permit, but he said he couldn't. He said the Chicago Hog Control Committee had an embargo on. I tried to get hold of the Hog Control Committee, and found out they had gone out of business two weeks before. I called Mr. Pickering, the superintendent of the Rock Island lines. He said he couldn't do anything for me about getting a permit to sell and ship to Chicago, but he could get a permit to ship to Omaha. That is the proposition there. It is the same way with stock cattle. I have had cattle unloaded at the end of twenty-eight hours in Waterloo, twenty-five miles from home, with feed bills of from $12 to $14.

Mr. Corrie: Our complaint at Ida Grove is that we can't get cars for Chicago at all so far as hogs are concerned, and we are forced to take lower prices to Sioux City and Omaha. We have been very lenient about this. We do not want to lose what we have gained in all these years.

Mr. Cold: We went to Selma, Iowa, and bought two carloads of cattle, and loaded them about 3 or 4 o'clock, and they said they would be in Eldon to take the first train to Cedar Rapids. We went home in our car, expecting them to be there the next morning. They did not come that day, and they didn't come until the next day at 4 o'clock. Before they got there, the agent told me they had been unloaded and fed at Vinton.

Mr. Ritger: There is just one objection I think of in that zone system. There is a certain class of stock there is competition in for eastern buyers. On certain days the buyers, I understand, for New York, Philadelphia, Buffalo or Baltimore, for a certain class of stock, take advantage of us. On Monday and Wednesday, the days under the old system, those buyers were strong competition to the packers. By the zone system, the man who is unfortunate enough on those days not to get there is at the mercy of the packers, and must take whatever he can get.

The President: I will say for the information and for the benefit of the men here, that it is my understanding that all those eastern buyers buy every day.

Mr. Harris: In answer to the remarks of the president, I want to say that the packers and the eastern order men are buying every day in the week, and the railroad service furnished two days in the week, going back to the two days market Tuesday and Wednesday. Since all that has happened, the packer is the eastern buyer.

Now, gentlemen, we have heard the complaints on service. I agree with you, from what I know, that what you have said is true, and more, too. The thing now, I think, you are most interested in, and I am sure I am, is to get for you the best service I can through the administration in Washington, and I assume and am going to ask you to indicate such as you want, for instance, special stock trains on the days on which you are permitted to ship in the zones in which you live.

(Voices: Yes, sir.)

I further assume, if there is a branch line that reaches beyond the zone line, you would like that branch line to be cleaned from its outer end to the main line, regardless of the zone.

(Voices: Yes, sir.)

And when that and other branch lines have hooked into the main line with its day's pick-up, then that train should become a stock train from the time it has its tonnage to the chutes.

(Voices: Yes, sir.)

I assume that you want this stock train scheduled from the further end of the branch by stations until it has arrived at its main line, just as it would be if it were a passenger train.

(Voices: Yes, sir.)

And you gentlemen have your stock there and load it just the same as if you were going to take a passenger train.

(Voices: Yes, sir.)

If there is a mishap, simply notify the shipper, get the information to him, so he won't have to walk the platform.

(Voices: Yes, sir.)

On the day in which your stock train is operating in that zone, and on no other day, will the stock train operate as a special train on account of the zone system.

Now the next thing I am most interested in is the time to arrive at the stock-yards chutes. I personally am a great believer in and a great admirer of something you can depend on. If your stock train is scheduled to the outer Rock Island break-up yard at 12 o'clock, that does not mean anything; it might just as well be in San Francisco. You want to get to the chutes, and when you get there it is up to the packing company to unload you.

I arranged in Kansas City yesterday, and put in this system I am proposing to you gentlemen, and I had with me from the Bureau of Markets at Washington, Mr. Hall and his traffic assistants, and the Food Administration people also. We had with us the general managers and general superintendents of the federal managers, and the stock yards and commission men, and we had with us Mr. Mercer, who represents over 6,000 live stock shippers of Kansas City; and we dicided we would not defer to any particular zone, but would start at a division point on the railroad and not in between, and any branch line would come in and hook up with that main line train. We agreed as a whole, and unanimously, that relief is necessary and it is wanted at this time.

With reference to facilities, our good friend refers to Chicago. There are a lot of things we might say. Labor and material are very high at this time. If we were to go to work in the next month, it is very questionable how many more chutes we could make that would give you relief. While you have got these unloading chutes, they carry with them two pens each. Now your alleys are limited, and your chutes, if doubled might crowd your alleys beyond capacity, and I do not believe you could increase the alley capacity in Chicago without great expense. Therefore, it seems to me that we have got to try and meet the conditions to give you relief at this time.

It does seem to me, if we change the zone territory as proposed, and give you the train service on the branch lines, and it be continued service as a passenger train, and agree upon an arrival time at the yards, such as will give you the day's market as intended, you will have cured a lot of complaints.

The President: There is one point referred to here by one or two gentlemen, about being unable to procure cars in competition with men who buy for what we call these local packing concerns. There was one gentleman here yesterday, from the town of Payton, on the M. & St. L., who told me they had been unable to secure any cars for two months, but if they wanted to ship to Cedar Rapids or distributing points thru the local buyer, they could get cars any time—or even to some eastern states. That is the situation that must be remedied. Mr. Corrie brought out that point very clearly. At Ida Grove men can secure cars practically any time to ship to Sioux City. They will buy the stuff and re-ship it right back thru Ida Grove. There is a regularly scheduled train out of Sioux City every night for Chicago, and it goes thru.

Mr. Foster: It seems the buyers have gone out and ordered cars for the rest of the winter. The farmer gets ready to ship his stock, and goes in to order a car, and there are twelve or fifteen cars ahead of him. One of the superintendents made the suggestion of limiting the time a man can order cars; say make a seven-day limit, so that you couldn't have the condition we had last winter. It seems to be just a question of piling up orders to see who is going to get cars.

Mr. Harris: Are those orders in writing?

Mr. Foster: Well, they are placed there, and one shipper asked the agent to see the books, and he absolutely refused to show the books.

The President: I know, so far as the local buyers are concerned, they can get cars to Chicago quicker than I can.

Mr. Harris: What would you offer as a remedy?

Mr. Philips: The remedy, to my mind, is apparent. When you think a man is trying to order cars at a half-dozen places, he is trying to get rid of his stuff, the cattle are ready to go, and so are the hogs, and he wants to get rid of his stuff.

Mr. Wilson: I was buying pigs in the St. Paul market last winter, and they had the same trouble. They ordered cars and bought what they could get, and then refused to take the cars. I had about twenty-five carloads of sheep and hogs, that should have been in double-deck cars, and I had to pay the single rate.

Mr. Harris: The Chicago packers can only kill 43,000 hogs a day. That is the very outside limit. The stock yards in the month of January will possibly handle 36,000 cars of live stock, which will run it about 4,000 greater than any previous month since the establishment of the yards. The country is so full of hogs that the eastern buyer is not buying many hogs in Chicago, because he can get about all the hogs he wants in Detroit, Indianapolis and other points. The south has doubled its production in the past year. Only three weeks ago Jacksonville, Fla., shipped sixty carloads to Fort Worth, Texas. The freight rate was $210 a car.

There is another side to the story. I am inclined to disbelieve that the packers are shipping many hogs from Sioux City to Chicago. Those hogs come from Fort Worth as a rule. New Orleans has quite a market, only recently owned and built by Morris & Company. They never had a hog market there in thirty or forty years. That is also true of Jacksonville and Louisville and Nashville. They built up good, big stock yards, and I can truthfully say that Detroit, Cleveland, Cincinnati and the east, including Boston, are going into those markets and buying and shipping for slaughter in the east. The Swift family has seven plants. They are not buying as heavily in the concentrated points; they can go south and get hogs.

Now as to some of the other complaints, wouldn't it be a short way to take them up with your association and let it report to the government? We would like to know the facts, so that we can send a man there to act on it. Be sure you get the right dope. We want to be frank and fair with you. You should be just as fair with us.

As to transportation, I have sat on the committee for five months, as to whether you should have transportation or shouldn't have it. I know you are placed in a very embarrassing position. Your neighbor or some good friend comes along and says: John, I would like to go to Chicago. We consider him an unnecessary attendant. We have left the gate open. I am going to say this to you, if that is not stopped you are going to lose your transportation. The government is right. I don't mind saying that I am one of four who voted for your transportation, and every one of the others against it.

You are on dangerous ground. How long it will last, I don't know. It depends upon your action. I know it is necessary for live stock to be accompanied. But the railroads and the most of the operating people have got it into their heads that the average man never sees his stock. I think there is something to that, in Illinois, Missouri and Iowa, where you go into the terminal market points.

The President: Do you know what situation the live stock claim situation is in?

Mr. Harris: Mr. Howard, of course, was our claim agent before he went to Washington, and the general instructions are to settle claims on their merits.

The President: He informed Mr. Thorne that Mr. Mercer would appoint a live stock end of the committee.

Mr. Thorne: Mr. Howard appointed a committee of six on grain claims, and the Interstate Commerce Commission requested the shippers to appoint a committee of six, representing the grain shippers as a whole. I was appointed as one member of those six. At one of our conferences, I said to Mr. Howard: "Why can't you give the livestock people some representation, the same as the grain shippers, and have a committee of six, and six of a railroad committee?" He said that would be the right thing to do. He asked me who I would suggest. I said to leave it to Mr. Mercer, president of the National Live Stock League. He said that just as soon as he was ready for a joint committee to be appointed, he would let us know. In the meantime he had a committee of six railroad men investigating, and as soon as they were thru and ready to report, he would let us know. I was advised that Mr. Mercer had suggested the appointment of a committee consisting of Mr. Sykes, Judge Cowan, Mr. Heineman, Mr. Stryker of Omaha and Mr. Parks. I do not know whether Mr. Howard is going to accept those appointments or not. I think the experience he has had with the rules about grain claims has been discouraging, and he may have abandoned the joint committee; but if he has not, that will be the program and that will be the committee.

The President: Mr. Harris has given us almost the entire afternoon. He is going to St. Louis from here, and wants some little time to make some notations. I think we have covered the whole matter pretty fully, as Mr. Harris certainly has a comprehensive knowledge and understanding of our needs here. I am sure I am going to keep in close touch with him, and if there is anything else we can add we will do it.

We certainly owe Mr. Harris a vote of thanks for coming here and listening to our complaints in this way. Will the members please rise to their feet in recognition of a vote of thanks to Mr. Harris?

Mr. Harris: Gentlemen, I thank you one and all, and I promise to do the best I can for your interests.

The convention adjourned **sine die.**

RESOLUTIONS ADOPTED BY THE CORN BELT MEAT PRODUCERS' ASSOCIATION.

Delegates in attendance at the fifteenth annual meeting of the Corn Belt Meat Producers' Association, held in Des Moines, January 28 and 29, 1919, join with the millions of other good citizens on the farms and in the cities in satisfaction at the successful termination of the war. We point with pride to the splendid service rendered by the farmers and stockmen of Iowa, both in furnishing by far a larger number of fighting men than any other class of people, and in maintaining food production under most trying conditions.

We find satisfaction in contemplating the great service the Corn Belt Meat Producers' Association has rendered not only to its members but to the stockmen and farmers of the entire west, both during the ten years preceding the war and especially during the war period. In avoiding political entanglements and adhering strictly to economic service, the Association has protected the agricultural interests most efficiently. During the trying times upon which we have entered, the need for a strong association of this sort is even more urgent than before, and every member should not only continue in his support of the Association, but should endeavor to enlist the support of his neighbors, whose interests are equal with his own.

Resolved, That we commend the Federal Trade Commission for its thoroughgoing and fearless investigation of and report on the packing industry as conducted by the five largest packers; and we express our appreciation of the work done by the Market Committee of the National Live Stock Association in preparing for and assisting in said investigation. We trust that this investigation may result in the enactment of corrective measures which will make it possible for all packing concerns, large and small, to compete on even terms in the purchase of live stock, and in the manufacture, sale and distribution of meats and all food products which they handle. Our representatives in congress are urged to work diligently for the enactment of such laws.

Resolved, That we favor the enactment by the congress of the United States of a law embodying the principles of the Kendrick bill. We believe this bill embodies the correct principles of control of the packing industries, stock yards, commission agents, and the marketing of live stock products of the country.

Resolved, That the circulation of unreliable and misleading statistics concerning the porduction and existing supplies of grains and live stock in the United States and in the world should be prohibited by law, and should be severely punished, and that such laws should apply to government officials and employes with exactly the same force as to individuals and corporations.

Resolved, That we note with approval the beginning made to organize the County Farm Bureaus of Iowa into a state federation; and we trust that this movement may be carried forward as rapidly as possible. We will welcome the aid of such a federation in securing economic justice for the farmer. We urge upon the members of this federation the necessity of preserving for themselves absolute freedom from outside influences of all kinds.

Resolved, That our agricultural colleges should as rapidly as possible discontinue the policy which they have followed in the past, of emphasizing increased production to the exclusion of any effective study of marketing problems. The greatest need of the farmers and stockmen of the country at the present time is reliable information on marketing conditions, and well-trained leaders to help them in their dealings with such organizations and powerful forces as the railroads, the packers, the boards of trade and other organized interests. We especially recommend a very thorough research into price fluctuations, production costs and the functions of our speculative future markets. We further request them to make a more careful study of the so-called law of supply and demand, as it applies to grains and live stock.

Resolved, That we favor the establishment of a Commission of Agriculture in Iowa; and call to the attention of the members of the legislature the importance of co-ordinating the various agricultural departments of the state.

Resolved, That government operation of the railroads, while perhaps a war-time necessity, has so far resulted in great financial loss and inconvenience to the farmer and stockman. Freight rates have been increased from 25 to 100 per cent; the time required to reach market has been greatly lengthened, causing large shrinkage; the uncertainty of securing cars when ordered has made it necessary to haul live stock to the shipping point and hold it there, at times for many days and at heavy loss, because of the failure of cars to arrive; the many embargoes placed upon the shipment of live stock has compelled the holding of stock after it was ready for market, thereby causing great waste of feed and at times a serious decline in the condition of the live stock; the collection of payment for damage actually suffered has been made exceedingly difficult; many changes have been made in rules and practices without due consideration to the injurious effect upon the farmer and stockman. All of this has very greatly increased the cost of marketing live stock, and is tending to greatly discourage live stock production. We demand that these unfavorable and burdensome conditions be remedied as quickly as possible; and to that end we demand that the full powers of the Interstate Commerce Commission, the various state commissions, and the courts, shall be immediately restored. We demand further that the Interstate Commerce Commission shall be given full authority to review all changes in rates, rules and regulations made by the United States Railroad Administration, and annul such as it may find unjustified under peace conditions.

Resolved, That the Director General of Railroads be requested to immediately instruct the claim agents of the various carriers to promptly adjust live stock loss and damage claims under the rules and customs prevailing before the operation of the carriers was placed under government control.

Resolved, That we approve of governmental supervision and control of the stock yards and of the commission men and traders in live stock at the various central markets. These yards are in fact public utilities, just as are the railroads, and should be subject to strict supervision.

Resolved, That we commend the work of the Bureau of Markets in so far as it has gone about disseminating statistics concerning the marketing of live stock. Up to the present time, however, this information has not been of such a character as to make it of any great value to live stock producers except in an indirect way, and is not widely disseminated among producers. We request the Bureau of Markets to digest these statistics more completely, and to give them wider circulation and in a more understandable form. We request, further, that it issue reports in which should be given average prices and average receipts of hogs, cattle and sheep of different grades day by day at the principal markets in the corn belt, said prices to be furnished daily to all of the market and agricultural papers, and a weekly summary also to be furnished to such papers and to the various live stock organizations.

Resolved, That the Bureau of Markets be requested immediately to attack the problem of reducing the violence of the fluctuations in live stock prices. It should make a study of the extent to which these fluctuations are due to irregularities in supply and irregularities in demand, and to manipulation or ignorant interference with established customs, and it should study measures by which fluctuations due to these causes may possibly be rendered less violent. We further request the Bureau of Markets to give attention to the matter of developing a scientific grading system of live stock, and especially of cattle.

Resolved, That we commend the work done by the National Live Stock Shippers' League, which has been supported by the members of this and other live stock organizations.

Resolved, That we are opposed to the change from standard time to the "daylight saving plan," as the change of the working hours caused great hardship and inconvenience to the farmers of Iowa.

Resolved, That we condemn the Postoffice Department for curtailing the rural mail service in Iowa. And we demand the re-establishment of routes to give us as good service as we formerly enjoyed.

Resolved, That the substantial increase in the number of hogs marketed during the present winter, and to be marketed during the next four months, is due directly to the urgent appeals made by the government for such increase, and to the definite promise made by the Food Administration that in so far as it could do so it would see to it that the hogs marketed during this winter should sell per hundredweight for thirteen times the value per bushel of the corn fed into them. Not only has there been failure to maintain the price promised, but the hogs marketed during the months of October, November and December have sold for almost exactly the average price for the past ten years, measured by cost of production. There is now a nation-wide demand that hog prices be further depressed, although there is no material reduction in the cost of producing hogs now being marketed or which will be marketed during the next three months. Any further depression in the price of hogs will cause severe financial loss to those who increased their production against their better judgment and in full faith that the government promise would be kept. In view of the shortage of meat products in Europe, there is in our opinion not the slightest question but that all of our hog products would be taken gladly at the price promised by the Food Administration, if such price should be demanded from foreign buyers. We therefore condemn in unmeasured terms any efforts to still further reduce hog prices, and we demand that the government price-fixing committee shall at once announce that the price of hogs on the Chicago market shall not go below $17.50 per hundredweight during the months of February, March, April and May. We base this demand both upon the rightful claim of the hog producer that the government shall keep faith with him, and upon the repeated statements of Mr. Hoover and the Food Administration that all our hog products are urgently needed.

Resolved, That we are unalterably opposed to any further expenditure of government money for the building of merchant ships, and we are equally opposed to government operation of merchant vessels and to a government subsidy to such vessels. We demand that such merchant vessels as are already owned by the government and are not needed for the actual transaction of government business shall be disposed of to private corporations or individuals, and that so far as the government has to do with the operation of merchant ships, it shall see to it that they are operated on a strictly competitive basis. We favor such changes in our laws with regard to shipping as will enable the ship owners of the United States to compete on equal terms with the ship owners of all other countries engaged in traffic between the United States and other nations.

Resolved, That in view of the large increase in wheat acreage, due to the urgent appeals of the government for such increase and the promise of a definite price, we demand that the government take over the 1919 wheat crop in the same manner that it took over the 1918 wheat crop, paying the owner of the wheat the government price in full at the time the wheat is marketed. We will regard any scheme for indirect payment conceived for the purpose of demoralizing the prices of other grains and farm products as an evidence of sharp practice and bad faith.

Resolved, That we call upon the Department of Agriculture, and upon the various state agricultural colleges, to aid in making clear the fact that prices which have prevailed for agricultural products during the past forty years have not equaled the cost of production, if the farmer is allowed fair interest on the money invested in his plant and a wage for himself equal to the wage he must pay his hired hand. This condition can not continue without exhausting the fertility of our land and imperiling our civilization, and its dangers should be clearly pointed out by such public agencies as our Department of Agriculture and our state agricultural colleges.

Resolved, That while we demand economic justice for the farmer and stockman, and shall do everything in our power to promote organizations strong enough to secure it, we are not in sympathy with movements which depend mainly for their support on appeals to class prejudice and which are fostered by self-seekers or by men ignorant of economic laws. The hope of the farmer and stockman for a square deal must lie in a better understanding of business laws and conditions, without which he can not hope to secure proper changes in existing laws.

Resolved, That we commend the fearless and sound editorials in Wallace's Farmer concerning the prices under consideration by the Food Administration. We believe that these editorials were a prime factor in maintaining the prices of hogs and in preventing a reduction of prices below the cost of production. And we further commend the paper for the general advocacy of whatever was for the interest of the producer.

Resolved, That we commend the work of the officers of this Association, and especially we express our thanks to Mr. A. Sykes, president, and Mr. H. C. Wallace, secretary, for the excellent work done by them for our interests.

PART VIII

Report of Veterinary Surgeon.

During the biennial period from July 1, 1916, to June 30, 1918, this department has been called upon to investigate in all 789 calls which are tabulated as follows:

Anthrax, (suspected)	5
Blackleg	1
Cholera	13
Coital-Exanthema	31
Dourine, (suspected)	1
Forage Poison	9
Glanders	18
Hemorrhagic-Septicemia	23
Necro-Bacillosis	1
Rabies	4
Scabies	53
Stomatitis	2
Tuberculosis	588
Miscellaneous	40
Total	789

ANTHRAX.

The five outbreaks suspected of being anthrax were not substantiated by diagnosis and we are glad to report the state as being free from this disease.

BLACKLEG.

This disease exists to some extent in the state but, as a rule, is handled successfully by the owner of the livestock and his veterinarian. Through the prompt use of serum and vaccine serious loss from this disease is prevented.

HOG CHOLERA.

During the period covered by this report hog cholera has been steadily declining, both as to the number of outbreaks and the losses resulting from such outbreaks.

The prompt co-operative methods now applied to each outbreak prevent the serious spread of this disease.

The Bureau of Animal Industry, United States Department of Agriculture, during the past year has maintained an inspector, in charge of hog cholera control work—Dr. J. S. Keon, Room No. 18, Federal Building, Des Moines, Iowa, with a staff of twenty veterinary inspectors, who are located at the most advantageous points throughout the state. The entire time of this federal force of veterinarians is given to the investigation of outbreaks of disease in hogs, their services being free to the farmers for whom they diagnose the disease and give instructions as to the best methods of controlling the outbreak, and eradicating the infection from the premises.

The salaries and expenses of this Bureau force amount to approximately $70,000.00 per year, which the Federal Government is spending freely, for the benefit of our swine industry in Iowa.

In order to make this work thoroughly co-operative between the Federal Bureau and the Veterinary Department of this state there should be a special appropriation made by our Legislature of not less than $50,000.00 annually in order to thoroughly cover the entire state; in fact there should be an average of one official veterinarian per county, whose sole business should be the control of swine diseases. Elsewhere in this report there appears an article on Hog Cholera Control, by Dr. J. S. Koen, Inspector in charge.

COITAL EXANTHEMA.

Coital Exanthema is a transmissable vesicular disease of the urino-genital organs of the equine species which runs its course in from three to six weeks. It responds readily to local treatment and when properly handled complete recovery ensues. During the course of this disease it is necessary to suspend breeding, which, in some instances, prevents full production of the species.

All stallions and mares affected should be held in quarantine until complete recovery.

DOURINE.

Dourine is a malignant, specific, vesicular disease of the urino-genital organs of the equine species resembling closely in all its aspects and effects syphilis in the human patient. This disease is incurable. It has been the policy of the Federal authorities co-operating with the state department, to destroy all animals affected. As a result of this policy we are glad to state there is no known case of this disease in the state at this time.

During this history of this department three outbreaks have occurred in Iowa. The first one in Van Buren county in the year 1903. The second outbreak occurred in Taylor county in 1911, and the third in Carroll county in 1915. The origin of each outbreak was due to the importation of stallions from Europe. There was never any connection traced between the outbreaks.

FORAGE POISONING.

Forage poisoning is a convenient term applied to various toxic conditions resulting from the use of improper feed. In some instances the causative agent seems to be chemical in nature. In others toxins or ptomaines seem responsible for the condition, while again the condition may be due to micro-organisms, pathogenic in character. The condition commonly called "corn-stalk disease," comes under this heading. Owing to the fact that little is known of the nature of the so-called "forage poisoning," the only remedy at hand is change of feed or pasturage. In some instances a certain pasture or stock field which proves injurious early in the season may become safe later, due possibly to changes of climatic conditions, including frost. There should be continued research until the true nature of this disease or condition is discovered.

GLANDERS.

Glanders we are glad to report is not known to exist in the state of Iowa at this time. It was feared that the extensive movement of horses for war purposes would tend to spread the infection throughout the states. We are glad to state that such has not been the case, at least so far as Iowa is concerned.

HEMORRHAGIC SEPTICEMA.

Hemorrhagic Septicemia is a specific infection due to the presence of the bi-polar organism, which exists in the soil of certain fields and sections of the state. We have this disease in horses, cattle, sheep and swine. This disease was formerly classed as "forage poisoning." Vaccines are now available for the treatment of this disease in the different species, the prompt use of which prevents extensive losses.

NECRO-BACILLOSIS.

Necro-bacillosis is a condition or disease found in cattle, sheep and swine resulting in the infection of the animal by the bacillusnecrophorus. This infection in cattle results in what is termed "ulcerative-ano-vulvitis," a local infection. In sheep it results in what is commonly called "lip and leg" ulceration. In swine this condition produces "sniffles" or "bull nose," necrotic-pneumonia and necro-entiritis. This infection is rather rare in cattle and sheep but is quite prevalent in hogs and in all external forms responds rapidly to treatment. The internal necrotic conditions found in hogs are more difficult to overcome and cause considerable loss.

RABIES.

Rabies is practically extinct in Iowa at the present time and when prevalent should always be controlled by strict quarantine measures and the destruction of infected animals. There should be perfect isolation of all exposed animals including confinement or destruction of dogs in the community where the outbreak occurs.

Sheep scabies is more or less prevalent at all times and is apparently on the increase, in Iowa, in the last two years.

We find that many shipments of feeder sheep imported into the state and passed through the most approved dips develop more or less disease during the feeding period. The native sheep in some localities are infected.

In order to properly control this infection in sheep this department should have one or more specialists devoting their entire time to the treatment of flocks and disinfection of premises.

STOMATITIS.

Stomatitis is a diseased condition occasionally found in cattle and more rarely in horses. It is of special interest when found in cattle because of its similarity to European foot and mouth disease, which fact makes it necessary to investigate reports very promptly and thoroughly. Such investigation is always made when reports are received stating that cattle are affected with sore mouth and, when there is the least doubt as to the nature of the infection, experimental inoculations are promptly made.

TUBERCULOSIS.

Tuberculosis is not only the greatest menace known to human life, but undoubtedly is the cause of a greater economic loss in cattle and hogs than all other diseases combined. This statement is borne out by the postmortem reports of federal inspectors in the various abattoirs of the country.

This disease exists to a greater or less extent in every state and country, and we must admit that the disease is too prevalent in Iowa cattle and hogs to enable our people to get the best returns for their efforts in cattle and swine production.

Tuberculosis is preventable and, with thorough measures may be controlled and eradicated. It will cost considerable to eradicate this disease, but the cost of eradication will be small compared with the direct losses accruing annually. Many of our breeders, especially of pure bred cattle, have determined to eradicate tuberculosis from their cattle and to place their herds upon the tuberculosis-free accredited list.

At this time several herds have been tested by the Federal Bureau and this department, in co-operation. The Federal Bureau has stationed F. H. Thompson, Inspector-in-Charge of tuberculosis eradication work in Des Moines; his address is Room 18, Federal Building, Des Moines, Iowa. At present Dr. Thompson has two veterinary inspectors on his force.

Congress has made an appropriation for the carrying on of this work on the part of the Federal Bureau and, in order that this department may co-operate fully, the Legislature should appropriate not less than $50,000.00 annually, to enable us to meet the demand of our people for herd tests. In addition to this we believe an appropriation should be made from which to indemnify owners of condemned cattle. A reasonable indemnity will remove all opposition to the work and the work will progress favorably.

TUBERCULIN TESTING OF HERDS.

The following is an exact copy of the Co-Operative Rules and Agreement for the accrediting of tuberculosis-free herds by the United States Department of Agriculture Bureau of Animal Industry, and the Iowa Commission of Animal Health:

Agreement For the Tuberculin Testing of Herds of Pure Bred Cattle and the Uniform Methods and Rules For Tuberculosis-Free Accredited Herds of Pure Bred Cattle. Unanimously Adopted by the United States Live Stock Sanitary Association and by Representatives of Pure-Bred Cattle Breeders' Association, Approved by the United States Bureau of Animal Industry and the Iowa Commission of Animal Health.

Whereas, The Bureau of Animal Industry of the United States Department of Agriculture and the Iowa Commission of Animal Health, for the purpose of improving the pure-bred dairy and beef breeds of cattle in the United States, encouraging recognition of the importance of maintaining herds of such cattle free from tuberculosis, and promoting the interchange of healthy, pure-bred cattle, proposes, so far as available funds permit, to co-operate with the breeders of pure-bred cattle, by assisting them to eradicate tuberculosis from their herds and to maintain officially tuberculosis-free accredited herds in the state of Iowa.

Now, Therefore, in consideration of receiving assistance from the Bureau of Animal Industry and the Commission of Animal Health along the lines and for the purposes specified, I ....do hereby agree to co-operate with the said Bureau and State Officials upon the following terms

1. I will permit my entire herd, or any cattle of my herd, to be examined and to be tuberculin tested or retested at such times as are considered necessary by the Bureau or State Officials.

2. I will cause all animals which show physical evidence of tuberculosis to be promptly slaughtered under the United States meat-inspection regulations, and I will cause the carcasses of said animals to be disposed of according to the meat inspection regulations of the Bureau of Animal Industry and State Laws, based upon the lesions found upon post-mortem inspection.

3. All animals which react to the tuberculin test, but which show no physical evidence of tuberculosis shall be removed from the herd and shall be disposed of as recommended by the Bureau or State Officials.

4. It is agreed that quarantined reacting bulls may be used for breeding, provided they are held upon the staff, their sexual organs properly disinfected and the cow restrained by some suitable method so as not unnecessarily to be exposed to tuberculosis from the bull or infected premises.

5. I will cause in all cases where the milk or milk products from the quarantined reacting cows are to be used for any purposes whatever, the said milk or products to be first submitted to pasteurization at not less than 150 deg. F., for not less than 20 minutes.

6. I will cause the calves from quarantined reacting cows to be removed from their mothers at birth, to be maintained upon premises free

from infection with tuberculosis, and to be fed upon the milk of cows which have passed a satisfactory tuberculin test or upon the pasteurized milk of tuberculin reactors.

7. I will allow no cattle to be associated with my herd which have not passed a tuberculin test approved by the Bureau or State Officials. I will keep all new cattle separated from my herd, pending the application of a tuberculin test by an inspector of the said Bureau of State. I will notify the proper officials immediately, giving details of the identification characteristics and records of tuberculin tests of any cattle which may be added to my herd.

8. I will surrender any premises contaminated by tuberculous animals as indicated by a physical examination or a tuberculin test, to a thorough cleaning and disinfection, at my expense, under the direction or supervision of the Bureau or State Officials. I will comply with all reasonable sanitary measures and other recommendations for the control of tuberculosis.

The following "UNIFORM METHODS AND RULES FOR TUBERCULOSIS-FREE ACCREDITED HERDS OF PURE-BRED CATTLE," having been adopted by all parties concerned and entered as a part of this agreement:

1. A tuberculosis-free accredited, pure-bred herd is one which has been test by the subcutaneous method, or any other test approved by the Bureau of Animal Industry, under the supervision of the Bureau of Animal Industry, or a regularly employed veterinary inspector of the state, in which co-operative tuberculosis eradication work is being conducted jointly by the United States Department of Agriculture and the State. Further, it shall be a herd in which no animal affected with tuberculosis has been found upon two annual or three semi-annual tests, as above described, and by physical examination.

2. The entire herd, or any cattle in the herd, shall be tuberculin tested or retested at such times as is considered necessary by the Federal and State Authorities.

3. No cattle shall be presented for the tuberculin test which have been injected with tuberculin within sixty days immediately preceding or which have at any time reacted to a tuberculin test.

4. No herd shall be classed as an accredited herd in which tuberculosis has been found by the application of the test, as referred to in paragraph 1, until such herd has been successfully subjected to two consecutive tests with tuberculin, applied at intervals of not less than six months, the first interval dating from the time of removal of the tuberculous animal from the herd.

5. Prior to each tuberculin test satisfactory evidence of the identity of the registered animals shall be presented to the inspector. Any grade animal maintained in the herd, or associated with animals of the herd, shall be identified by a tag or other marking satisfactory to the State and Federal Officials.

6. All removals of registered cattle from the herd, either by sale, death, or slaughter, shall be promptly reported to the said State or Federal Officials, giving the identification of the animal and, if sold, the name and address of the person to whom transferred. If the transfer is made from the accredited herd to another accredited herd, the shipment shall be made only in properly cleaned and disinfected cars. No cattle shall be allowed to associate with the herd which have not passed a tuberculin test approved by the State and Federal Officials.

7. All milk and other dairy products fed to calves shall be that produced by an accredited herd, or, if from outside or unknown sources, it shall be pasteurized by heating to not less than 150 degrees F., for not less than 20 minutes.

8. All reasonable sanitary measures and other recommendations by the State and Federal Authorities for the control of tuberculosis shall be complied with.

9. Cattle from an accredited herd may be shipped interstate, by cer- of the state in which the herd is located, or from the office of the Bureau tificate obtained from the office of the State live-stock sanitary officials of Animal Industry, without further tuberculin test for a period of one year, subject to the rules and regulations of the State of destination.

10. Strict compliance with these methods and rules shall entitle the owners of tuberculosis-free herds to a certificate, "Tuberculosis-free Accredited Herds," to be issued by the Bureau of Animal Industry and the state live-stock sanitary authority. Said certificate shall be good for one year from date unless revoked at an earlier date.

11. Failure on the part of owners to comply with the letter or spirit of these methods and rules shall be considered sufficient cause for immediate cancellation of co-operation with them by the State and Federal Officials.

My herd is composed as listed below

Breed	Pure-bred	Grade	Total
Females over six months old........	....	....	....
Males over six months old..........	....	....	....
Calves under six months old........	....	....	....
Total number of animals in herd..	....	....	....

In Witness Whereof, I have signed this Agreement this..............

day of ....One thousand nine hundred and............

....
Owner.

....
Address.

Witness.......................................

Address.......................................

We are pleased to introduce here a brief statement by Dr. F. H. Thompson, Inspector-in-Charge of Tuberculosis Eradication work for the Bureau in Iowa:

THE ERADICATION OF TUBERCULOSIS.

The eradication of animal tuberculosis is one of the greatest needs of the live-stock industry, both in the state and nation. It is estimated that the annual loss from this disease is at least $25,000,000.00. Not only is it taking a large amount of wealth from the country, but it is a very serious menace to the health of our people.

On account of this great loss, which is increasing every year, the U. S. Government is taking active steps to try and eradicate this disease, but in order to carry this out properly, they must have the active co-operation of the state and the individual owner also.

In states where the percentage of tuberculosis is very low, rapid progress is being made with this work, and some few states where the disease runs four or five per cent have made good progress by co-operation of the state and Bureau of Animal Industry in applying the test and in reimbursing owners for the diseased cattle found.

It is now an absolute necessity for this state to legislate for an appropriation to indemnify owners for tuberculous cattle, if any progress is to be made in the eradication of this disease.

In some herds that are badly affected, the disease may run as high as 25 per cent, therefore it will readily be seen that the owners of such herds should have some indemnity in order to induce them to clean up.

The U. S. Government has appropriated money to carry on this work in states that agree to co-operate, and will place equally as many men in the field to apply the test and will also pay indemnity where states will also agree to indemnify owners.

The State of Iowa has the distinction of having MORE PURE BRED CATTLE than any other state in the union.

The State of Iowa raises MORE THAN TWICE AS MANY HOGS as any other state in the union.

Consequently, Iowa is the wealthiest live-stock state, but it is estimated that 23 per cent of Iowa hogs are also affected with tuberculosis, and, as hogs get their infection almost entirely from cattle, this proves conclusively that tuberculosis is quite prevalent among cattle.

The U. S. Bureau of Animal Industry will co-operate with any state which wishes to eradicate tuberculosis from its live stock, and place the pure-bred herds on the Tuberculosis-Free Accredited Herd List, which is a herd that has passed two annual or three semi-annual clean tests.

The states bordering Iowa on the north and west are very anxious to get cattle for breeding purposes from this state, and as these states have sixty and ninety day re-test regulations, it is to the interest of every breeder to have cattle that are free from the disease.

Breeders are becoming educated along these lines and it is only natural that prospective buyers will give the accredited herd the preference.

It is merely a business proposition for breeders to clean up, as their reputation depends upon the quality of goods delivered.

HOG CHOLERA CONTROL.

By J. S. Koen, U. S. Inspector-in-Charge.

Five years ago the losses from hog cholera were 2,709,876 hogs in a single year. During 1917 the losses were 188,909 hogs, and will be still less during 1918. This shows the progress of the fight waged during this time for the control of this dread disease.

These results show conclusively that hog cholera can be and is being controlled by the adoption of the control measures evolved by the Dallas County experiment during the years 1913-1916. In July, 1913, the Bureau of Animal Industry, U. S. Department of Agriculture, in co-operation with the state authorities, inaugurated the first experimental demonstration in Dallas County to determine the best method for the control and ultimate eradication of hog cholera by a judicious use of the serum preventive treatment in conjunction with practical quarantine and sanitary measures.

This three-year demonstration proved that the fundamental principles which must be applied if cholera is to be controlled are:

I. Vaccination.
II. Quarantine.
III. Sanitation

I. Vaccination—By vaccination is meant the use of the preventive serum and virus treatment. There is no other treatment known that will either prevent or successfully combat hog cholera. The results of vaccination depend upon the quality of the serum and virus used, method of administration and the condition of the animals to which the treatment is administered.

The quality of the serum is established by the strict Federal inspection maintained at all plants doing an interstate business. The intelligent administration of the treatment necessitates a thorough understanding of both the disease and treatment.

Since only competent veterinarians possess these qualifications the most favorable results follow the use of serum and virus in their hands.

Their experience and scientific knowledge is very necessary to determine the condition of the hogs at time of vaccination.

Many unfavorable results have followed the use of serum where the hogs were too sick, the pigs too young, the dosage of serum and virus too small, etc. These irregularities are being rapidly overcome, yet in spite of them there has been a saving of 85 per cent of all hogs in infected herds given the serum treatment as compared with a loss of more than 85 per cent of all hogs in infected herds not so treated. When infected hogs are treated early there has been a loss of less than 5 per cent.

To compare the serum treatment with any other "so-called" treatment as a preventive in well herds would be ridiculous. There is no other product advocated as a preventive that its producer dare use against virulent virus.

By a continued use of the serum treatment cholera can be ultimately eradicated, at which times its use will be unnecessary.

II. Quarantine—"Quarantine" is the most abused and least understood word in the English language. Most people regard it as a club or means to restrict personal liberty. It really is quite the contrary and means protection. As applied to hog cholera it includes the care of the sick hogs and the destruction of the dead. All sick hogs should be confined under cover in order to confine the virus they discharge with their urine, feces, eye and nose secretions, and to prevent their scattering virus about the premises. It is just as sensible to scatter virus over the premises out of a bottle as to let the hog sick with cholera run at large to do the same thing by its body discharges. All dead hogs should be destroyed by burning. This can be accomplished with fire above the ground or by burying in quicklime. By observing these practical quarantine measures the owner of the infected herd and the neighbors are alike protected.

III. Sanitation—A thorough cleaning and disinfection of pens, sheds, hog houses, around straw stacks, etc., where the sick hogs have nested is essential to rid the premises of infection and make them safe for the next crop of pigs. In addition to this all farm premises should be cleaned and disinfected annually, preferably in the spring time.

These control measures are being generally employed with gratifying results. Following the successful demonstration in Dallas County, where the losses were reduced from 25 per cent of all hogs raised in 1912 to 15 per cent in 1916, the control work was extended July 1, 1916, to a district comprising twenty-seven counties in central Iowa, with headquarters in Des Moines. With the conclusion of the demonstration in Dallas County the use of free serum and treatment was discontinued. Seven experienced inspectors were assigned to districts of four counties each, and intensive work begun to secure the adoption of the control measures wherever cholera made its appearance.

The work of these inspectors includes investigation of reported outbreaks, sanitary surveys of infected premises, warnings to neighbors supervising the cleaning and disinfection of farms, inspection of imported hogs, consultations with practicing veterinarians, etc.

The work was further extended to include the entire state in September, 1917. Twenty veterinary inspectors were assigned to the work and have been actively prosecuting it since that time. These inspectors are located in such a manner as to be easily available for every county. Their services are free. The success of their work depends largely upon the cooperation of the farmers, and as their work becomes better known and more thoroughly understood we look confidently to a continued reducing of the losses from cholera until its eradication has been accomplished.

LIVE STOCK EXPORTED FROM IOWA.

Number of Animals Exported and Destination Between July 1, 1916, and June 30, 1918

State	Horses	Mules	Dairy and Breeding	Stockers	Hogs	Sheep
Alabama	23		73		56	
Arizona	2		56		6	
Arkansas	167	34	366	3	113	
California	4		153		73	
Colorado	1,202	66	1,021		115	
Connecticut	999		16		6	
Florida	36	19	28		106	12
Georgia	2		25		52	
Idaho	82	7	399		37	
Illinois	784	30	3,975	31	837	66
Indiana	169	5	251		190	7
Kansas	566	19	922		191	10
Kentucky	48		88		34	1
Louisiana	329	35	215		35	5
Maine	1		2			
Maryland	36		2		12	
Massachusetts	17		62	26	4	
Michigan	683	2	108	121	33	
Minnesota	7,989	337	6,835	247	3,744	898
Mississippi	73	15	126		61	
Missouri	789	60	2,656	20	377	159
Montana	2,215	120	1,596	37	233	7
Nebraska	1,888	236	5,158	2,813	3,043	143
Nevada	1		10			
New Hampshire	1		18			
New Jersey			1		50	
New Mexico	22		77		5	4
New York	298		58		14	
North Carolina	3		24		16	
North Dakota	1,783	111	1,475		294	64
Ohio	71		88		71	
Oklahoma	327	13	925		80	
Oregon	10		37		5	
Pennsylvania	20		15		31	
Rhode Island	2					
South Carolina			14		8	
South Dakota	3,636	165	6,169	750	2,779	665
Tennessee	239	10	257		54	
Texas	409	66	479		256	156
Utah	12		292		5	
Vermont	4		43		7	
Virginia			49		43	
Washington	18	2	96		14	1
West Virginia	1		8		8	1
Wisconsin	1,941	73	1,224	319	487	81
Wyoming	535	22	1,214		89	2
Canada	754	4	24		1	
Totals	28,191	1,451	36,730	4,367	13,675	2,282

LIVE STOCK IMPORTED INTO IOWA.

Number of Animals Imported and States From Which They Came, July 1, 1916, to June 30, 1918.

State	Horses	Mules	Dairy and Breeding	Stockers	Hogs	Sheep
Alabama	3	2	67			
Arizona						
Arkansas	3	1	134		324	
California					2	
Colorado	106	4	51	226	330	
Florida		5				
Georgia					2	
Idaho			3			
Illinois	25,011	308	4,724	23,243	3,557	1,544
Indiana	66	3	219		33	56
Kansas	345	129	1,281	189	4,193	3
Kentucky	16		37		2,364	
Louisiana	4	2	22		64	
Maine			1			
Massachusetts			1			
Michigan	9		18			
Minnesota	2,322	106	5,621	45,964	12,243	153
Mississippi					17	
Missouri	875	1,554	3,571	42,689	6,636	320
Montana	264	17	90		198	12,319
Nebraska	2,737	857	4,836	89,985	4,806	415
New Jersey					50	
New Mexico	45		124			
New York	3		42			
North Carolina						2
North Dakota	815	99	211	29	77	
Ohio	13		117	823	22	
Oklahoma	138	50	154		316	
Oregon	2		3	97	150	500
Pennsylvania			21			
South Carolina					1	
South Dakota	1,092	63	1,574	3,035	2,181	1,262
Tennessee	71	75	377			
Texas	93	26	94	1,655	3,084	18
Utah	2		3			
Vermont			1			
Washington			1		33	
West Virginia	1		3			
Wisconsin	412	68	4,075	58	623	59
Wyoming	261	40	52	75	664	
Canada	59	2	42			
Totals	34,768	3,411	27,570	208,068	41,970	16,651

FINANCES OF THE VETERINARY DEPARTMENT AND COMMISSION OF ANIMAL HEALTH.

Following is financial report of the State Veterinary Department and Commission of Animal Health. Salary of State Veterinary Surgeon and Office force provided from general pay roll. Per diem and expenses of assistant state veterinarian provided by annual appropriation:

State veterinarian (2 years)	$ 3,600.00
Secretary (2 years)	2,400.00
Stenographer (2 years)	1,800.00
	$ 7,800.00

Appropriation for two years for operation of Veterinary Department		$22,000.00
Overdrawn account for biennial period ending with June 30, 1916	475.86	
Per diem, transportation, hotel and miscellaneous expenses of department and assistant state veterinary surgeons for the year ending with June 30, 1917	10,049.44	
Per diem, transportation, hotel and miscellaneous expenses of veterinary department and assistant state veterinary surgeons for the year ending June 30, 1918	8,432.12	18,957.42
*Balance		$ 3,042.58

COMMISSION OF ANIMAL HEALTH

There was received from veterinary examination fees, practice certificate renewals and sale of veterinary registers for the biennial period ending June 30, 1918		$ 5,243.00
Expended for salaries, Commission of Animal Health and clerk	3,725.00	
Expended for hotel and miscellaneous expenses of Commission of Animal Health for biennial period ending with June 30, 1916	931.23	4,656.23
*Balance		$ 586.77

*Claims for per diem and expenses incurred prior to June 30, 1918, but filed after that date, not deducted.

RESULTS OF VETERINARY EXAMINATIONS.

Under the Veterinary Practice Act, the examining board is required to meet at least twice a year, which is as often as practical. However, this makes its necessary for many veterinarians to wait considerable time to qualify and, according to law, they cannot enter into practice until they have been registered. (During the year ending with June 30, 1918, on account of war conditions, it was found necessary to hold a special examination in May, 1918.)

This difficulty could be met by a clause providing for a temporary permit upon presentation of proper credentials. Other changes, such as a reciprocity clause and a clause providing that no person who has not registered in accordance with the provisions of the original veterinary practice act, shall be permitted to practice or represent themselves to be a veterinarian.

Many inquiries have been received regarding credentials necessary to qualify for examination under the veterinary practice act of the state of Iowa. It seems many are led to believe that a course in a veterinary correspondence school or even a few years services with a practicing veterinarian is all that is required.

The veterinary examining board have adopted as a standard the following list of colleges recognized by the Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C., and which is also accepted by most veterinary examining boards:

Alabama Polytechnic Institute, College of Veterinary Medicine.
Chicago Veterinary College.
Cincinnati Veterinary College.
Colorado State College, Division of Veterinray Medicine.
George Washington University, College of Veterinary Medicine.
Grand Rapids Veterinary College (2).
Indiana Veterinary College.
Iowa State College, Division of Veterinary Medicine.
Kansas City Veterinary College.
Kansas State Agricultural College, Veterinary Department.
McKillip Veterinary College.
Michigan Agricultural College, Division of Veterinary Medicine.
New York-American Veterinary College.
New York State Veterinary College.
Ohio State University, College of Veterinary Medicine.
St. Joseph Veterinary College (3).
San Francisco Veterinary College.
State College of Washington, Veterinary Department.
Terre Haute Veterinary College.
United States College of Veterinary Surgeons (4).
University of Pennsylvania, School of Veterinary Medicine.
University of Toronto, Ontario Veterinary College (to include only those graduated during or prior to 1897).

Graduates of the following named colleges which are not now in session will be admitted to examination:

American Veterinary College, New York, N. Y.
Columbia Veterinary College, New York, N. Y.
Coulmbian University, Veterinary School, Washington, D. C.
Harvard University, School of Veterinary Medicine, Boston, Mass.
McGill University, Veterinary Department, Montreal, Canada.
National Veterinary College, Washington, D. C.

Graduates of the following named foreign colleges will be admitted to examination:

Glasgow Veterinary College, Glasgow, Scotland.
Royal Veterinary College, London, England.
Royal Veterinary College of Ireland, Dublin, Ireland.
Royal (Dick) Veterinary College, Edinburgh, Scotland.
The New Veterinary College, Liverpool, England.
Veterinary College of Lemberg, Austria.
University of Melbourne, Veterinary School, Melbourne, Australia.

1. This list is subject to change. The failure of any college to comply with the provisions of the regulations will necessitate removal from the list.

2. To include only those graduates who have pursued the study of veterinary medicine at this college or in some other accredited college for three years.

3. Matriculates of 1910, in addition to the regular course will be required to take one year's additional instruction at this college. Graduates prior to 1914 will be required to have had one year's practice and to take an additional year's instruction at this college.

4. Graduates of 1910 and 1911 will be required to present a certificate showing attendance for an additional session at this or some other accredited veterinary college.

The following is a statement of the Veterinary Examinations held by the Veterinary Examining Board of the Animal Health Commission:

College	July 1916			January 1917			July 1917			January 1918			Special May 1918			Total		
	Examined	Re-examined	Failed	Examined	Re-examined	Failed	Examined	Re-examined	Failed	Examined	Re-examined	Failed	Examined	Re-examined	Failed	Examined	Re-examined	Failed
Chicago Veterinary College	13	---	3	5	3	3	20	---	5	2	2	1	22	1	1	62	6	13
Kansas City Vet. College	15	---	1	2	1	1	16	---	3	4	2	1	32	---	1	69	3	7
Iowa State College	8	---	1	1	1	---	19	---	---	22	---	---	1	---	---	51	1	1
McKillips Veterinary College	10	---	3	4	1	1	12	---	6	1	---	---	15	---	---	42	1	10
St. Joseph Vet. College	3	---	---	1	---	---	3	---	1	---	---	---	5	---	1	12	---	2
Grand Rapids Vet. College	1	---	---	---	---	---	1	---	---	---	---	---	---	---	---	2	---	---
Ohio Veterinary College	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	1	---	---
Ontario Veterinary College	1	---	---	---	---	---	3	---	---	---	---	---	---	---	---	4	---	---
New York Vet. College	---	---	---	---	---	---	1	---	---	1	---	---	---	---	---	2	---	---
Indiana Veterinary College	---	---	---	1	---	1	1	---	1	1	1	1	---	---	---	3	1	3
Cincinnati Vet. College	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	1	---	---
Western Veterinary College	---	---	---	---	---	---	1	1	1	---	---	---	---	---	---	1	1	1
San Francisco Vet. College	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	1	---	1
Total	51	---	8	14	6	6	79	1	17	32	5	3	75	1	3	251	13	37

ASSISTANT STATE VETERINARIANS.

		Commission Expires	
Alcorn, H. A.	Adair	October	18, 1918
Anderson, T. E.	Bedford	October	15, 1920
Anstey, J. A.	Massena	June	12, 1920
Adamson, A. A.	Newton	October	15, 1920
Anderson, C. W.	Jewell	October	15, 1920
Allbright, V. W.	Jefferson	February	8, 1919
Anderson, I. A.	Stanhope	October	28, 1921
Brown, I. C.	Afton	October	29, 1920
Blanche, C. W.	Belle Plaine	October	15, 1920
Bauman, S. H.	Birmingham	October	15, 1920
Beaumont, L. C.	Britt	May	21, 1921
Brodie, A. S.	Cedar Falls	October	15, 1920
Brooks, J. L.	Clinton	October	15, 1920
Button, P. G.	Cresco	October	15, 1920
Baldwin, A. F.	Creston	May	21, 1918
Baughman, D. E.	Fort Dodge	October	15, 1920
Brazie, F. E.	Harlan	October	15, 1920
Ballard, F. S.	Sibley	July	1, 1920
Baker, C. G.	Spencer	October	1, 1920
Bunker, J. W.	Winterset	October	15, 1920
Buxton, E. A.	Vinton	October	15, 1920
Barrett, L. F.	Cascade	June	5, 1919
Bevins, N. O.	Hawkeye	January	22, 1920
Bleakley, C. E.	Seymour	March	17, 1920
Bronson, W. W.	Wyoming	November	9, 1921
Buchleiter, Walter H.	Braddyville	July	15, 1920
Bemis, H. E.	Ames	September	1, 1920
Bergman, H. D.	Ames	September	1, 1920
Born, A. L.	Story City	March	1, 1921
Byrnes, R. C.	Traer	June	18, 1921
Conners, H. W.	Bloomfield	October	12, 1918
Chandler, T. W.	Davenport	October	15, 1920
Copeland, F. B.	Logan	October	15, 1920
Caine, P.	Estherville	April	8, 1921
Conquist, A. M.	Gowrie	July	16, 1921
Cummings, W. P.	Woodward	November	17, 1919
Carson, Geo. M.	Lake Mills	September	6, 1920
Crider, C. L.	Elkader	July	20, 1921
Connell, A. G.	Aurelia	October	25, 1921
Deiling, N. J.	Dallas Center	October	15, 1920
Diller, L. L.	Traer	December	8, 1921
Dodge, Geo. A.	Northwood	October	15, 1920
Downing, Tom	Tipton	June	5, 1920
Dixon, James	Ames	October	15, 1920
Dimmock, W. W.	Washington	September	1, 1920
Edwards, F. H. P.	Iowa City	October	15, 1920
Evans, C. S.	Sioux City	March	13, 1918
Edwards, R. M.	Des Moines	October	22, 1921
Fullerton, W. R.	Dubuque	October	15, 1920
Franks, J. E.	Indianola	October	15, 1920
Flickinger, P. W.	Greenfield	April	20, 1921
Freed, O. F.	Huxley	August	21, 1921
Fisher, B.	Prescott	November	19, 1920
Gooder, J. W.	Osage	October	15, 1920
Gillian, H. M.	Mason City	October	15, 1920
Guinn, S. H.	Marengo	June	6, 1920
Gidley, T. W.	Malvern	October	15, 1920
Griffith, J. W.	Cedar Rapids	October	15, 1920
Gilloon, T. J.	Dyersville	October	10, 1919
Gidley, R. E.	Shenandoah	October	15, 1920
Glen, J. C.	Norway	October	6, 1920
Grover, B. E.	West Branch	December	15, 1920
Greenwood, E. S.	Laurens	April	10, 1921
Graf, C. J.	Exira	November	11, 1919
Garman, C. E.	Nora Springs	October	15, 1920
Garrett, S. B.	Pleasantville	October	15, 1920

		Commission Expires	
Gamrath, C. L.	Fairfield	November	15, 1920
Green, March	Grinnell	May	18, 1921
Gubser, N. E	Earlham	October	23, 1921
Haxby, J. W	Clarinda	October	15, 1920
Hollingsworth, F. W	Council Bluffs	October	15, 1920
Harmon, B.	Decorah	October	15, 1920
Howe, E. E.	Des Moines	October	15, 1920
Hagerty, H. J	Dubuque	October	15, 1920
Hanson, R. E	Forest City	October	15, 1920
Hell, Henry	New Liberty	June	3, 1920
Hunt, C. E.	Mt. Pleasant	October	15, 1920
Heck, W. A	New Liberty	October	15, 1920
Hoaglund, A. L	Ottumwa	December	6, 1918
Harry, C. E.	Anita	October	15, 1920
Hodam, W. F	Le Mars	October	6, 1920
Hazlet, S. K	Oelwein	November	28, 1920
Hickman, B.	Central City	May	8, 1919
Hoffeins, H. J	Alta	September	28, 1918
Hinken, A. H	Sheffield	May	15, 1920
Hanson, W. L	Greene	November	20, 1920
Hume, F. G	Leon	April	6, 1921
Hughes, Guy	Corydon	December	1, 1921
Huston, S. S	Jefferson	December	14, 1921
Igmand, J. E	Red Oak	March	12, 1921
Johnston, S. H	Carroll	October	15, 1920
Johnston, E. E	Centerville	August	7, 1920
Johnson, F. L	Albia	March	1, 1921
Johnson, Raymond	Richland	April	14, 1920
Juhl, C. E	Osage	January	25, 1919
Jessen, Julius A	Shelby	August	16, 1919
Jorgenson, G. E	rmont	May	1, 1921
Jacobs, W. F	Nashua	May	10, 1921
Kelso, R. F	Corydon	October	15, 1920
Kulp, A. I	Adel	September	26, 1919
Kippen, N. A	Independence	December	1, 1920
Kaderabek, A.	Fort Dodge	January	15, 1921
Knight, E. L	Waukon	May	8, 1921
Keefe, J. T	Farley	October	15, 1920
Keith, C. L	New Market	March	21, 1921
Killips, H.	Oskaloosa	December	1, 1920
Lodge, H. G	Clarksville	October	1, 1920
Loiler, R. A	Sidney	November	2, 1918
Lichty, J. M	Sioux City	July	16, 1921
Larimer, R. E	Madrid	October	15, 1920
Lovesee, R. G	Manson	March	2, 1921
Lantz, R. A	Exira	October	6, 1918
Lingo, J. H	Lone Tree	March	31, 1919
Lee, H. N	Creston	May	15, 1920
Miller, D. W	Council Bluffs	May	16, 1920
Moore, J. J	Lamoni	October	15, 1920
Marks, W. H	Lake Park	June	3, 1920
Miller, C. B	Manning	March	4, 1919
Malcolm, P.	New Hampton	October	15, 1920
Moon, S. B	Rock Rapids	June	3, 1921
Middleton, A. C	Grundy Center	March	19, 1921
Macklin, W. E	Coon Rapids	October	15, 1921
Moore, R. G	Toledo	December	1, 1920
Menary, A. R	Cedar Rapids	February	15, 1921
Mosey, O. Q	Mt. Vernon	March	6, 1921
Morris, H. R	Omaha, Neb.	January	26, 1919
Madson, W. E	Hawarden	July	12, 1919
Murray, Chas.	Ames	September	1, 1920
Murphy, H., S	Ames	September	1, 1920
Maxfield, F. M	Tama	December	1, 1920
Mannion, M. C	Hazleton	December	22, 1920
Middleton, Fred	Grundy Center	August	19, 1921
McRoberts, H. L	Columbus Junction	October	15, 1920
McAhren, D. W	Sioux City	August	12, 1921
McCulloch, H. I	New Sharon	October	15, 1920
McIntyre, H. A	Maquoketa	October	15, 1920
McGrath, W. C	Exira	April	10, 1921
McLeod, J. W	Charles City	August	23, 1919
McCabe, J. C	Fairfax	July	29, 1919

		Commission Expires	
Neiman, F. J	Marshalltown	March	28, 1919
Norden, C. J	Nebraska City, Neb	March	13, 1919
Nicholson, Jas.	Humboldt	October	15, 1920
Nelson, Jas. M.	Sigourney	October	15, 1920
Nygren, H. J	Waverly	July	17, 1921
Nord, C. F	Onawa	September	6, 1919
Nutty, N. S	Nevada	November	21, 1919
Nelson, C. O	Ogden	October	15, 1920
Noggle, C. A	Marshalltown	January	25, 1919
Olmsted, H. H	Greene	December	23, 1918
Olson, Carl	Sac City	July	6, 1920
Pease, E. H	Cherokee	November	2, 1918
Piper, E. G	Ida Grove	October	20, 1920
Parke, Chas.	Moville	October	20, 1920
Parker, F. F	Oskaloosa	October	20, 1920
Phelps, C. D	Clear Lake	August	2, 1921
Potter, J. S	Iowa City	December	16, 1920
Potter, L. D	Emmetsburg	November	27, 1918
Place, F.	Milford	July	12, 1920
Quin, A. H	Creston	March	20, 1919
Russell, L. W	Anamosa	October	15, 1920
Readhead, Wm.	Lenox	May	14, 1921
Readhead, R. F	Corning	August	1, 1921
Rowe, O. W	Keokuk	October	15, 1920
Roach, F. G	Miles	October	15, 1920
Robertson, J. E	Monona	October	15, 1920
Repp, N. M	Perry	September	26, 1919
Robinson, V. J	Atlantic	November	4, 1919
Rogers, H. C	Audubon	October	15, 1920
Ricketts, R. A	Zearing	May	5, 1919
Reynard, J. P	Osceola	March	13, 1921
Reinhard, T. J	Nevada	July	12, 1920
Roberts, L. L	Hubbard	October	15, 1920
Roberts, E. P	Gilman	October	15, 1920
Sayers, E. E	Algona	October	15, 1920
Stange, C. H	Ames	October	15, 1920
Stewart, C. E	Chariton	January	13, 1921
Simpson, H. C	Denison	October	15, 1920
Smith, V. J	Eldora	January	29, 1918
Sheumaker, E. C	Mt. Ayr	October	15, 1920
Shipley, L. U	Sheldon	October	15, 1920
Stewart, W. C	West Union	June	10, 1920
Scott, C. J	Knoxville	January	28, 1921
Scott, G. A	Waterloo	September	8, 1919
Sexton, G. J	Sumner	November	1, 1919
Sparks, C. J	Sully	November	21, 1919
Smith, L. E	Jefferson	October	15, 1920
Sevenster, John	Hamburg	October	15, 1920
Spence, J. H	Clinton	October	15, 1920
Smith, W. C	Fairfield	October	15, 1920
Spiker, W. A	Melcher	October	12, 1918
Smith, W. A	Rock Valley	April	1, 1919
Stromlund, E. V	Sloan	October	15, 1920
Swanson, A. C	Webster City	March	1, 1921
Simonsen, W. E	Cherokee	August	19, 1921
Stone, W. E	Bedford	November	9, 1921
Strandberg, J. J	Belle Plaine	October	15, 1921
Treman, A. J	Lake City	October	25, 1918
Tillie, John	Muscatine	October	15, 1920
Talbot, P. L	Sioux Rapids	October	15, 1920
Talbot, W. W	Ft. Madison	October	18, 1918
Thomsen, J.	Armstrong	October	15, 1920
Treman, H. B	Rockwell City	November	20, 1918
Thompson, H. G	Davenport	January	18, 1921
Trafton, R. E	Paton	March	1, 1921
Uehran, Geo. E	Atlantic	October	15, 1920
Underwood, J. R	Des Moines	November	21, 1919
Vernon, J. M	Des Moines	May	18, 1921
Van de Waa, H. J	Orange City	October	10, 1919
Van Vranken, H. S	Story City	October	15, 1920
Visser, A. J	Hull	August	15, 1920

		Commission Expires
Wall, Robert, D	Des Moines	June 8, 1920
Wilhite, C. L	Manilla	October 15, 1920
Wolfe, R. F	Guthrie Center	October 15, 1920
Wood, A. L	Hampton	October 15, 1920
Williams, J. E	Webster City	May 21, 1921
Wolfe, E. C	Avoca	June 21, 1919
Ward, B. F	Anthon	September 26, 1919
Wolfe, Jerry	Grand Mound	October 15, 1920
Wiebel, J. H	Keota	January 23, 1921
Wall, Joe F	Altoona	August 21, 1921
Winch, Geo. B	George	September 28, 1918
Willis, V. C	Waucoma	June 11, 1920
Waite, J. T	Fenton	July 1, 1920
Wagoner, T. J	Dumont	September 1, 1920
Ward, B. F.., Sr	Glenwood	November 2, 1920
Wessen, H. R	Scranton	January 26, 1921

PART IX

Bulletins and Papers of Interest to Farmers and Stock Growers.

THE USE OF LIME ON IOWA SOILS.

By Geo. E. Corson.

Soil acidity is one of the most important problems before Iowa farmers at the present time. The following questions regarding lime and its use on land are constantly being asked:

How may I determine whether my soil is acid and in need of lime? Is lime a fertilizer? How much lime is needed per acre? What is the most desirable form of lime to use? Where may I get limestone and how much does it cost? What is the best method of spreading lime and when should it be applied? Will it injure the land? How often will lime need to be applied? Does it pay to use limestone?

This circular has been prepared to answer these questions and to give further information on this subject.

IOWA SOILS NEED LIME.

According to recent tests of soils from all sections of Iowa, fully 60 per cent are acid and need lime. There are three principal reasons for the loss of lime from the soil. First, there is a constant removal of lime from the soil in drainage water; second, the organic matter in the soil produces acids when it decays, and a small amount of lime is used up by these acids; third, crops, especially the legumes, remove large amounts of this material from the soil. These losses cannot be avoided because soils should be well drained, should be supplied with large amount of organic matter, and should contain lime for the use of crops.

TESTS FOR ACID SOILS.

Acid soils may be indicated by the presence of such plants as horse-tail rush, sheep sorrell, corn spurry and wood horse-tail. These weeds grow unusually well in acid soils and where they are present in large numbers farmers should test their soils to determine whether they are acid.

Some legumes such as red clover, sweet clover and alfalfa will not make their best growth on "sour" soils. If red clover fails to grow on soils where good stands of this crop were once secured, it is a fairly good indication that the soil is in need of lime.

By far the most reliable means of determining whether a soil is acid is to test it or send a sample to the Iowa Agricultural Experiment Station and have it analyzed. A simple method of testing a soil for acidity is by means of blue litmus paper, which may be purchased from most any druggist.

To make the litmus paper test, take a handful of wet soil and make it into a ball. Break the ball in halves and insert a strip of blue litmus paper. Press the halves firmly together, and allow to stand twenty minutes. At the end of that time break the ball apart and examine the paper. If it is pink, the soil is acid. If no change has taken place in the color of the paper the soil does not need lime. This test, while it is fairly reliable in determining the presence of acids, gives little indication as to the amount of lime which should be applied. The Soils Section of the Iowa Agricultural Experiment Station will test soils for their lime requirement, by the Truog method, free of charge, and make recommendations as to the proper amount of lime to use.*

In collecting soil samples for the acidity test, care should be taken to choose them from areas representative of the entire field. Clear the surface of any vegetation and dig a sample to a depth of seven inches. Take a sample of the subsoil from seven to 18 inches at the same location. Make ten other samplings a few rods apart in the same manner and on areas representative of the same kind of soil. All surface samples are then thoroly mixed. About one pint of the mixture is placed in a bag, can, or other convenient receptacle. The subsoil samples are handled in the same manner. Both surface and subsoil samples should be labelled, securely wrapped and sent to the Soils Section, Iowa Agricultural Experiment Station, Ames, Iowa.

KIND OF LIME TO USE.

There are four forms of lime but all of these cannot be recommended for correcting soil acidity.

Burned Lime is made by heating limestone to a red heat. As a result of this heating a caustic lime is produced.

Water slaked lime is formed when water is poured over burned lime. This material has a burning effect on plants if not properly applied.

Air slaked lime is formed when burned or water slaked lime is exposed to the air.

The three forms of lime mentioned should not be used for correcting soil acidity unless completely slaked, applied in small amounts and allowed to remain in the soil for some time before seeding any crop.

Burned lime, water slaked lime or air slaked lime may be spread on plowed land in the fall and by spring the material will have become sufficiently slaked.

Ground limestone is the most common and desirable form of lime to use for agricultural purposes. It is made by grinding raw limestone rock such as may be found in the quarries throughout the state. For best results, this material should contain 85 to 95 per cent carbonate with 60 to 70 per cent of the stone in a powdered form.

Ground limestone is not considered a direct fertilizer but a material to be used for correcting the acid condition which exists in many soils.

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*The Soils Section is frequently called upon to make a complete analysis of soils and fertilizers. At the present time tests can only be made for the lime requirement of soils and the carbonate content of limestone, as no appropriation is available with which to carry on indiviidual analyses for nitrogen, phosphorus, potassium and other plant food elements. Complete analyses of soils are made, however, in connection with the soil survey and the results thus secured are published in reports for each county surveyed.

Limestone may be purchased from the firms listed at the end of this circular.

AMOUNT OF LIME TO USE.

The amount of lime to use depends upon the extent of the acidity and the quality of the limestone. No definite amount can be recommended for all soils as the lime requirement will vary from less than one ton to more than seven tons per acre. Farmers should have their soils tested in the manner already suggested and supply the proper amount of limestone, as shown by the test.

There are no data that indicate just how often lime should be applied to soils, therefore, farmers are urged to have their fields tested every four or five years to determine whether lime is needed.

TIME TO APPLY LIMESTONE.

Ground limestone or limestone screenings may be applied at any time the land is being prepared for a crop without injury to that crop or to the soil. For best results it should be well worked into the surface soil, but never plowed under. The most desirable time is, perhaps, in the fall on plowed ground. Limestone may be spread on cornstalk land in either the winter or early spring and disked in when the seed bed is prepared for the following oat crop. It is often desirable to make applications of lime one or two years before seeding clover, for in this way the lime becomes well incorporated with the soil and conditions made more desirable for the growth of the clover crop.

If potatoes are grown, limestone should be applied following the removal of this crop as there is a tendency for lime to favor the growth of potato scab.

METHOD OF APPLYING LIMESTONE.

Limestone may be conveniently applied with the manure spreader, providing a layer of soil or manure is placed on the bottom of the spreader before loading the stone. The beater chain may be removed, the apron run slowly and only a thin layer of stone allowed to spread. The speed of the apron and amount of stone distributed to the acre will need to be judged in each individual case as this will be governed by the condition of the stone, make of spreader and size of the load.

Spreading the material from a wagon by means of a shovel may be found satisfactory for small areas, although there is usually an uneven distribution of the lime.

ALL CROPS DO NOT NEED LIME.

Many experiments have been conducted to determine whether all crops need applications of lime. From the results of these experiments it has been found that some crops are not injured by the presence of acids in the soil, as for example, potatoes, redtop, hairy vetch, rye and alsike clover.

Inasmuch as most ordinary farm crops are benefited by lime, applications of this material may be safely made on all cultivated soils.

IOWA LIMESTONE SUITABLE FOR CORRECTING SOIL ACIDITY.

There are many quarries in Iowa that contain limestone suitable for correcting soil acidity. This material is being ground by individuals and in some communities co-operative grinding is being done. By the use of portable crushers, ground limestone may be produced at a moderate cost. A list of firms offering limestone crushers for sale is given in the latter part of this circular.

The Soil Section is prepared to test limestone to determine whether it is desirable for agricultural purposes. Samples of limestone should be taken with care as the stone is exceedingly variable in different parts of the same quarry. Select samples from 10 different parts of the same quarry, grind and mix thoroly. Place about one-half pint of the mixture in a clean container and send to the Soils Section, Iowa Agricultural Experiment Station, Ames, Iowa.

The test is made free of charge and results of analyses will be reported as promptly as possible.

LIMESTONE APPLICATIONS PAY.

Limestone will not injure the land in any way; it benefits soils by making them sweet, improves their physical condition, aids in the growth of desirable soil bacteria, makes more plant food available and increases yields of crops, especially clover and alfalfa.

The following summary of results secured by making one application of limestone to acid soils, indicates that this is a profitable material to use.

THREE YEAR TEST AT BRYANT, IOWA.

	Bu. per acre		Tons per acre
	1916 Oats	1917 Oats	Clover and 1918 Timothy
No treatment	58.6	61.7	1.81
Limestone	60.4	69.5	2.61
Limestone and Manure	63.4	88.3	2.65

FOUR YEAR TEST AT CALUMUS, IOWA.

Treatment	Bu. per acre			Tons per acre
	Wheat	Corn	Oats	Clover
	1915	1916	1917	1918
No treatment	17.7	38.5	32.2	1.78
Limestone	18.5	47.6	35.6	2.43
Limestone and Manure	24.0	55.5	55.9	3.38

EFFECT OF LIMESTONE ON SOY-BEANS, DAVENPORT, IOWA.

Treatment	Yield, 1918
No treatment	3,345 pounds per acre
Manure	3,980 pounds per acre
Manure and Limestone	4,760 pounds per acre

The results show that limestone not only increased the yield of clover, but also brought about a considerable increase in the yield of soy-beans, wheat, corn and oats. Other results from all parts of the state show that limestone when applied to acid soils, gives profitable increases in crop yields.

Lime will not take the place of manure or other fertilizers. It should however, have a place in all systems of permanent fertility, which include the rotation of crops, the use of limestone, manure and legumes and turning under the last crop of clover and all crop residues.

TEST YOUR CLOVER AND TIMOTHY SEED.

By C. M. King and L. H. Pammel.

Quite a number of queries reach the Botanical Section with reference to the quality of clover, alfalfa, alsike and timothy seeds.

The tests made show considerable variation. Many new seeds are being introduced with impure seed. The vitality in some cases is low.

There is great need that farmers should buy only seed which has been tested for germination and purity. If you want your seed tested without cost send small samples (2 ounces) to the Botanical Section of Iowa State College, Ames, Iowa.

On account of the present attractive prices, much clover and timothy seed of inferior grade is finding its way into the spring market. Such seed frequently contains dangerous weed seed, such as Canada thistle, quack grass, horsenettle, dodder, wild carrot and chicory, and the seed is often of low vitality. We have had some samples so old or poorly cared for that tests showed almost no germination. Some samples also, carry a heavy percentage of dirt and waste. These conditions emphasize the need of inspecting seed before buying it.

In case of our regular dealers thruout the state, interest in good seed may be depended upon; the difficulty is in reaching that considerable quantity of seed which comes into the market from miscellaneous sources, often seed of forgotten history, or seed from outside of the state, sent in by parties who fail to conform to the Iowa Seed Law.

In sound, bright, uniform seed a slight percentage of harmless impurities is negligible; when the impurity content is large however this first cost factor is worthy of consideration. But seed samples vary from sound seed of every degree of brown and shrunken seed, entire samples, or in mixture. Poor looking seed is sure to be of inferior quality of germination; much of it proves to be non-germinable, weak or dead seed. Use of such seed ensures the farmer sweeping loss in his crop, besides the slight loss in dollars at purchase.

Alsike and timothy seed mixtures are especially liable to introduction of waste material and low grade clovers, since such adulteration is not readily apparent on casual inspection.

It is wise to know whether one is paying for good seeds or for weeds and waste. The best seed is the only economical seed to buy.

LEGAL STANDARDS OF PURITY AND GERMINATION (OR REQUIREMENT FOR SALE) FOR IOWA.

	Purity percentage	Germination percentage
Alfalfa	96	80
Alsike	90	75
Red Clover	92	80
Timothy	96	85

Superior or even acceptable seed reaches a much higher grade of excellence than is required by the legal standards; and much higher grades than the above are guaranteed for high grade seed, as indicated by the following table:

PERCENTAGE OF PURITY AND OF GERMINATION OF HIGH GRADE SEED (PREPARED BY THE SEED LABORATORY OF THE UNITED STATES DEPARTMENT OF AGRICULTURE)

	Purity percentage	Germination percentage
Alfalfa	99	95
Alsike	98	95
Red Clover	98	95
Timothy	99	96
Sweet Clover	98	90

THE ALSIKE TIMOTHY MIXTURE.

Attention is especially called to a noticeable comparison observed the present season between those mixtures and samples of alsike only, or of timothy only. The mixture often contains an excess of impurity, carrying very frequently quantities of sorrel and nightflowering catchfly, and are an especial refuge for Canada thistle seed.

Germination results for immediately present season are about as follows:

Timothy (separate samples) 96% (in alsike and timothy mixtures) 91%
Alsike (separate samples) 88% (in alsike and timothy mixtures) 54%

These results while but partial indicate that inferior seeds are often used in the mixtures.

INJURY FROM WHITE GRUBS IN IOWA.

By E. D. Ball and E. V. Walker.

The serious outbreaks of white grubs that have occurred in northeastern Iowa during the past ten years are part of a general outbreak appearing in a number of more or less timbered areas in a belt running from Minnesota and Iowa east to New York, Connecticut and New Jersey. These grubs first appeared in unusual number in 1909, increased in severity in 1912 and reached a climax of injury in 1915. In 1918 the damage was considerably less than in the previous outbreak and it is probable that the parasites and other enemies of the grubs will reduce their numbers to a nearly normal amount by 1921 or 1924 at the latest.

THE WHITE GRUB AREA.

June bugs and white grubs occur in all parts of Iowa every year, but usually in small numbers. These insects require three years for their development, but there are three different broods, one appearing each year.

In the wooded area of northeastern Iowa one of these broods has become enormously abundant, while the other two have not increased materially in numbers. Figure 1 shows the area in which this increase has occurred and also a few scattering places in other parts of the state where damage has been reported.

It must be remembered in using this circular that it applies only to the area shown on the map and to the brood occurring every three years as shown in figure 2, and that bad infestations seldom occur very far from timber.

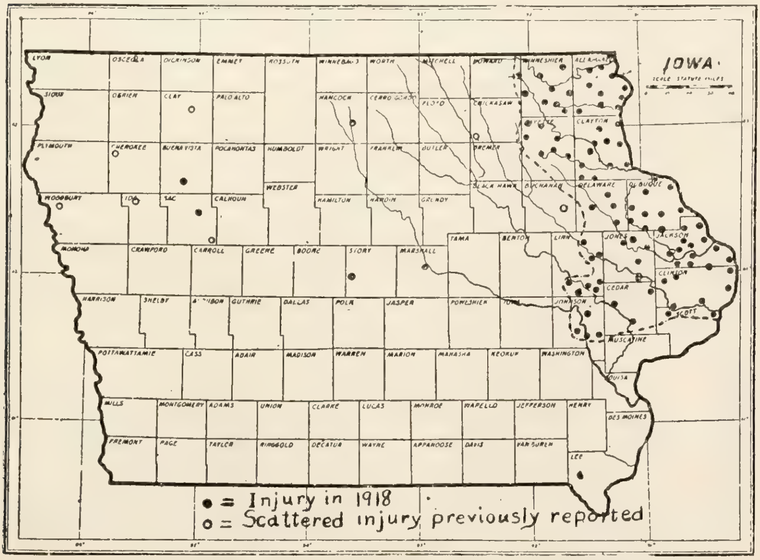

Fig. 1—Showing region in which white grub may be expected.

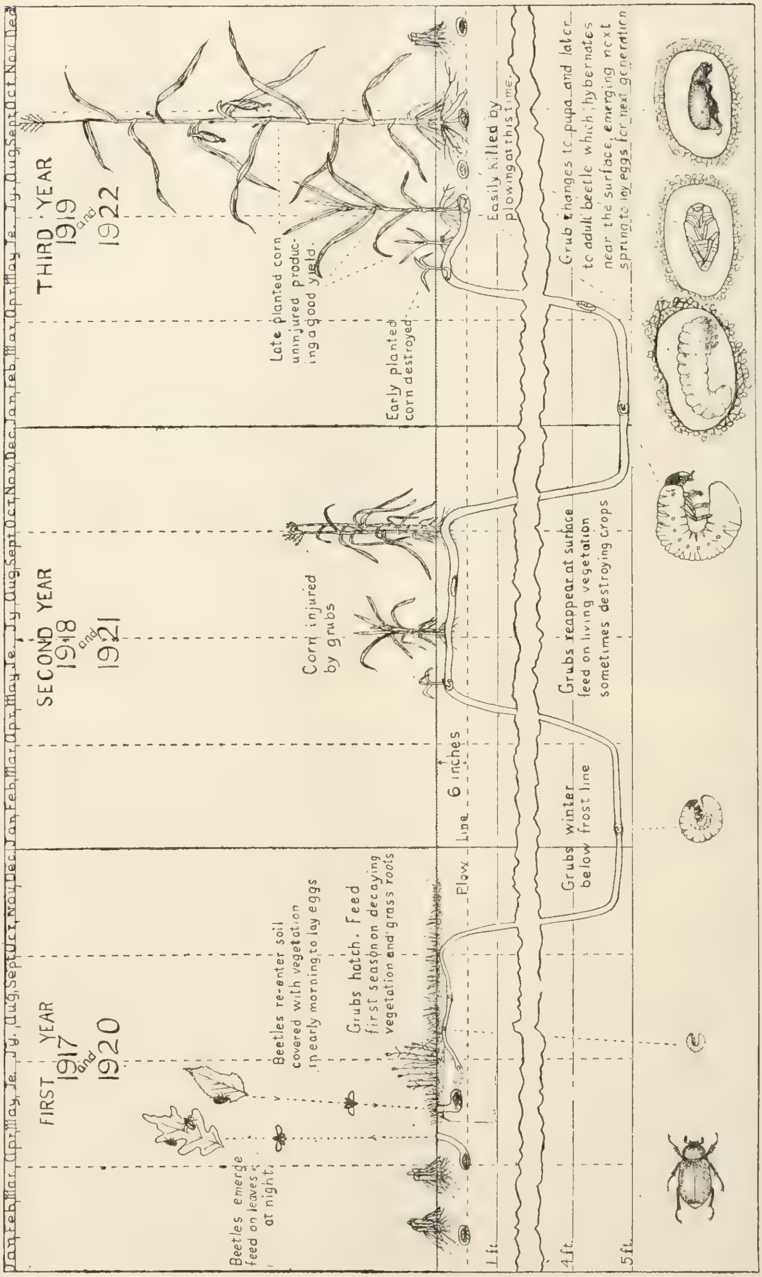
Jan Feb Mar Apr May Je Jy Aug Sept Oct Nov Dec
Jan Feb Mar Apr May Je Jy Aug Sept Oct Nov Dec
Jan Feb Mar Apr May Je Jy Aug Sept Oct Nov Dec
FIRST YEAR 1917 and 1920
SECOND YEAR 1918 and 1921
THIRD YEAR 1919 and 1922
Beetles emerge feed on leaves at night.
Beetles re-enter soil covered with vegetation in early morning to lay eggs
Grubs hatch. Feed first season on decaying vegetation and grass roots
Plow Line 6 inches
1 ft.
4 ft.
5 ft.
Grubs winter below frost line
Corn injured by grubs
Grubs reappear at surface feed on living vegetation sometimes destroying crops
Early planted corn destroyed
Late planted corn uninjured producing a good yield.
Easily killed by plowing at this time.
Grub changes to pupa and later to adult beetle which hybernates near the surface, emerging next spring to lay eggs for next generation

Fig. 2—Showing the three-year-old life cycle of the white grub.

CROPS INJURED.

These grubs, under natural conditions, are found only in grass sod. They live three years in the ground, but never travel from one field to another. When sod that is infested with them is plowed up and put into other crops, the grubs are compelled to feed upon whatever they find there. The crops that suffer worst are corn and potatoes. Small grains are seldom injured severely because of their abundant root system and early maturity. Buckwheat and the leguminous crops, such as clover, alfalfa and the various forms of beans and peas are not natural food plants for the grubs and are seldom damaged.

THE LIFE CYCLE.

The life cycle of the white grub can be readily seen by referring to figure 2. This insect should not be confused with the large grub so often found in manure piles and stack bottoms. The two differ in both life history and feeding habits.

The clumsy brown May beetle or "June bug" so often seen about the lights in the spring, is the parent of the common white grub. These beetles emerge from the ground in the evening during May and early June, as shown in figure 2, to feed on the foliage of many species of trees and shrubs. They return to the soil in the early morning to hide during the day and to deposit their eggs. The eggs are deposited in rather compact soil, preferably grass sod or a good stand of small grain. Eggs are seldom deposited in loose cultivated ground or in a heavy stand of pure clover or alfalfa.

The eggs hatch in three or four weeks and the young grubs feed that summer on the grass roots and decaying vegetable matter in the soil, doing little damage. About the middle of October, as shown by figure 2, they begin to burrow deeper into the soil. The winter is passed below the frost line, from four to six feet below the surface. They reappear at the surface in May of the second year and by the end of the season have attained nearly their full growth. It is during this year that the greatest amount of damage is done.

The second winter is also passed deep in the soil. The grubs feed only a short time during May and early June of the third year, then they go down to a depth of about five or six inches and construct an oval earthen cell within which they transform to a pupa and, in August, to the adult beetle. They remain in this cell until the following spring, when they come out to fly to the trees and later to lay eggs for the next generation.

CONTROL.

When the grubs are in the field there is no practical method by which we can get rid of them without injury to the crops. They can probably be best controlled by proper crop rotation. Fields that are intended for corn or potatoes in 1921 should have a good stand of one of the clovers or alfalfa or be in some cultivated crop in 1920. Fields known to be badly infested with small grubs in the fall of 1920 should be left in grass or sown to some small grain that will stand up well on that kind of soil.

FALL PLOWING.

Fall plowing is of importance in the control of the grub, during the year when it changes to the adult form (1919 and 1922). If done early, while the pupa is soft and helpless, merely breaking the cell means the death of the insect. If the plowing is done later, the beetle is soft and tender and cannot readily construct a new cell in which to pass the winter and so will perish.

WHAT TO DO IN 1919 AND 1922.

Figure 2 shows that the large grubs will come up to the surface in the spring of 1919 and in 1922 and feed greedily a short time only, then they stop feeding suddenly and form an earthen cell, in which they later change to a beetle.

Early corn will suffer, but can be replanted. Later corn may be slightly injured at first, but will recover and make a good crop. All sod land intended for cultivation during the next two years should be broken in the fall of 1919 or the spring of 1920 before the "June bugs" fly and lay eggs. If this is done, the land will be free from grubs.

WHAT TO DO IN 1920 AND 1923.

These will be "June bug years," as shown in figure 2. Trees may be defoliated by the beetles, but there will be no injury to the crops. Do not plant small grain on land intended for corn the next year. Alfalfa or clover may be broken up in the fall for corn land.

WHAT TO DO IN 1921 AND 1924.

These are the "grub years." Corn should not be planted on land that was in grass or grain the previous year if small grubs were present in the early fall. A corn field that is being injured should not be replanted to corn, but may be planted to buckwheat, beans or peas. Millet or cane may be used if the grubs are not too abundant.

SOME COMMON POULTRY DISEASES.

ROUP.

Roup is a more or less contagious disease appearing in several forms chiefly among chickens. Severe colds, chicken pox, sore head, rattles or diptheritic roup are all thought to be but different form of the same infection known generally as roup. It is most prevalent during the fall and early winter, attacking both young and old birds. The exact cause of the disease is not known, but it is supposed to be due to a very small bacteria or similar organism. It is known, however, that it flourishes in dark, cold, damp or draughty houses, or in over crowded houses, where the ventilation is not sufficient to supply plenty of fresh air to the birds. Any condition tending to make the birds uncomfortable or to weaken their vitality or vigor is conducive to an outbreak of roup. It seems to be present in most flocks continually, only awaiting a favorable opportunity to make its appearance. It may, however, be introduced by purchased birds or contracted at poultry shows or from coops in which diseased birds have been shipped.

Symptoms.—Birds affected with the most common form of roup usually show at first the symptoms of a cold. A very offensive odor is present and there is a watery discharge from the nostril and eye. Later this may be a foamy white and then yellowish As the disease progresses, whitish patches may appear in the throat or mouth and the eye may swell. In case the eyelid becomes stuck together the eye may be enormously distended by the accumulation of pus in the eyesocket or the face may be swollen below the eye. In one form sores appear on the face and comb and may spread to other regions and in another there is a rattling in the throat due to pus forming in the glottis. All these symptoms may be present, or the disease may be localized and only one appear.

Method of Spread.—Infected birds carry the disease from place to place and infect others by contact. It is also spread through the drinking water and feed. It may spread rapidly throughout an entire flock or attack only a few birds, depending upon the virulence of the organism and the resistance of the birds. In some cases it is highly fatal and in others the birds suffer little inconvenience, sometimes laying throughout the course of the disease.

Control and Treatment.—Method of control and treatment depend largely upon the form of the disease. The first step is to remove all sick birds from the flock and if badly affected, kill and burn. If it is only a light case, these birds will often recover without treatment if placed in a well ventilated and dry coop. Next look for the cause of the outbreak, such as damp houses, overcrowding, draughts, poor ventilation or unsanitary conditions in general, and remedy that. Then to prevent spread of the disease clean out and disinfect the house. Control the food and water supply and keep it clean. Use bichloride of mercury in the drinking water, putting one 7.3 grain tablet in every gallon. Use only in earthen or wooden vessels. Spray over the heads of the birds at night while on the roost a strong solution of disinfectant with a vapor sprayer. Good ventilation and dryness in the house are essential if control methods are to be successful.

In case individual treatment is desired for especially valuable birds, put them in a dry, airy coop and proceed as follows: Scrape off all deposits in the mouth and throat and open the eye and nostrils by soaking in warm water; remove the scabs from exposed sores on the head and face and touch with a disinfectant undiluted; immerse the head of the bird in a warm saturated solution of potassium permanganate, holding until the bird struggles violently; or turn the bird on its back and pour the solution into the slit in the roof of the mouth until the nasal passages are flooded; feed lightly and repeat the treatment as often as necessary.

DIARRHOEAS.

There are various kinds of diarrhoeas that are apt to occur in the poultry flock. Some are contagious, being caused by specific organisms, while others are digestive disorders caused by irregularities in the feeding or management. When diarrhoea appears, besides isolating the sick birds and taking precautions against its spread by cleaning up the house and controlling the feed and water, the following suggestions may be followed to advantage:

1. Change the feeding system. Give wheat bran in a hopper, allowing the birds to help themselves. Give all the buttermilk or sour milk the birds will drink.

2. Give Epsom salts. One-half pound per 100 birds given in wet mash is the usual dose. For individuals, ½ teaspoonful dissolved in warm water may be given.

3. Disinfect the drinking water. Potassium permanganate added until a deep purple color is reached is especially good for young chicks. Bichloride of mercury used as in roup for old stock is very effective. Bichloride of mercury is a deadly poison and the utmost care in its use must be exercised. Do not use either of these medicines in metal vessels or drinking fountains.

Hyposulphite of soda often proves beneficial. Use several small crystals the size of a pea to a quart of water.

4. Control the food and water supply. Don't allow the birds to get their feet into either the feed trough or water dish, as many diseases are spread in that way.

CHOLERA.

Cholera is a highly contagious and fatal disease. It is characterized by a high mortality and rapid death. Affected birds usually die in a short time after exhibiting symptoms of the disease. Some birds never show any external symptoms, but drop dead in an apparently healthy condition. Others develop a less acute form and may linger for several days before dying.

Symptoms and Post Mortem Examination.—In the chronic cases the symptoms, while not always reliable, may indicate the presence of the disease. The bird becomes inactive and separates itself from the rest of the flock. The feathers are ruffled and the appetite is poor, but intense thirst may be exhibited. A greenish yellow color in the droppings is often noted, but this may be present in other diseases, so it is not a positive sign of cholera. Diarrhoea is usually present and the bird becomes extremely weak. It sits with the eye closed and breathes with difficulty. A thick mucus may be present in the mouth and throat.

Upon post mortem examination the small intestine is much inflamed and may be filled with mucus in which clots of blood are found, or the contents may be frothy and of a brownish color. Small hemorrhagic areas or enlarged blood capillaries may be found on the heart or spleen. The liver is congested and frequently shows whitish spots or irregular areas of degeneration. The kidneys often show inflammation and the lungs may be partly filled with a grayish brown exudate. Due to the paralysis of the digestive tract, the bird usually dies with a full crop and gizzard. If it has been sick for several days this food material may be partly decomposed and have a very offensive odor. This condition is quite characteristic of cholera.

Method of Spread.—Cholera spreads through the droppings of infected birds. These contain large numbers of the organism and if allowed to contaminate the food and water supply will infect well birds. The blood also carries the germ and it may be contracted by eating the dead bodies of the infected birds or by picking up dried blood where sick birds have been killed.

Control.—Treatment for sick birds is not advisable. Kill them at once by dislocating the neck and burn their bodies with those that have died from the disease. Institute control measures to prevent further spreading. Scatter the flock as widely as possible in small units. Close the house in which they have been until it can be thoroughly cleaned up and disinfected. Control the food and water supply, feeding in such a way that there is little chance for contamination by the droppings. Put the drinking water in clean wooden or earthen jars and in each gallon dissolve one 7.3 grain bichloride of mercury tablet. Prevent contact among the different groups of birds as far as possible. Be constantly on the lookout for sick birds and destroy at once any showing symptoms of disease. Clean up the house and yards thoroughly, burning all refuse, and disinfect it several times, allowing access to plenty of air and sunlight. It is better not to return the birds to the house for several weeks. Several months should elapse before any new stock is brought onto the place.

If prompt measures are taken when the disease first appears, it may be controlled and the loss kept at a minimum. Carelessness, however, will result in a heavy loss and the flock may be entirely wiped out.

LIVER TROUBLE.

Non-contagious liver diseases usually appear in the late winter and early spring. They are generally brought on by conditions of management during the winter months. Old birds are most subject to these troubles, and in most flocks a few are lost every year.

Symptoms and Post Portem Examination.—The diseased condition may manifest itself in several ways. In some cases the birds die suddenly and it is usually the heaviest hens that succumb. They may, however, become sluggish and the comb and face appear yellowish or purple in color. Diarrhoea may be present and the bird refuse to eat. In some cases partial recovery may take place and the bird appear brighter, occasionally, or it may recover entirely. On post mortem examination the liver may be greatly enlarged and the body filled with fatty tissue, or in some cases the liver shrunken and discolored. Other diseases, especially tuberculosis, blackhead and cholera, in which the liver is often involved, should not be mistaken for simple liver trouble, and if there is any reason to believe a contagious disease is present a positive diagnosis should be made by a veterinarian.

Control and Prevention.—Simple liver trouble may result from several causes. Lack of evercise during the winter and heavy feeding, especially on rich feeds, bring it about most frequently. It can be largely prevented by feeding a suitably compounded ration in a deep litter to induce plenty of exercise. Green feed is also valuable in preventing its appearance and may tend to check its development. Epsom salts administered as indicated for diarrhoea twice a week may prove beneficial. Exercise and fresh air are essential. In case any number of birds show symptoms of the disease, change the feeding system and the habits of the birds as much as possible. Feed a ration not too high in animal foods and corn. For individual birds, a ½ grain dose of calomel given once a day and followed by ½ teaspoonful of Epsom salts in a few hours may prove beneficial.

HOW TO DISINFECT.

In cleaning up a house in which disease has been present, thoroughness is essential. No crevice or corner may be overlooked, for disease can remain dormant for long periods only to break out again when it is uncovered by some ambitious hen. Nests, roosts and all portable fixtures must be removed and disinfected outside. Clean out all the litter and droppings and sweep out the dust and cobwebs. Then with a force spray pump (preferably a barrel spray) thoroughly soak the interior, including the floor and roof, with a strong disinfectant. The following may be used with good results:

Stock Dip or Commercial Disinfectants.—For general disinfecting in case of minor ailments, use as recommended by manufacturers. For cholera or tuberculosis they may best be used double strength. For mites, use about one gallon of dip to 10 or 15 gallons of water.

Lime Sulphur Whitewash—A satisfactory whitewash, which is also a strong disinfectant, may be made up as follows and best be applied with a spray pump.

1½ pecks rock lime
2 pounds salt
4 gallons lime sulphur solution
40 gallons water

Slack the lime in 4 gallons of water and add the salt. Allow this to stand for several hours, stirring occasionally until a smooth cream of lime is formed. When ready to spray, mix with the lime sulfur solution and fill up the barrel with water.

SPRAYING TREE FRUITS.

By R. S. Herrick.

To secure the best results from fruit trees it is as necessary to spray them as it is to do any other important work on the farm.

Spraying is cumulative in results, as not only large yields of better fruit are obtained, but the trees are in better condition to produce fruit buds for the next year's crop. During the growing season the trees must: first, feed the insect pests and diseases that live upon them; second, mature, if possible, a crop of fruit; and third, produce fruit buds for the next year's crop. Unsprayed trees are as a rule not able to perform perfectly all three of these functions, and hence become "shy" or alternate year bearers. A good motto is to "prune and spray every year." Then there will be some fruit worth picking each season.

In out 1918 demonstrations sprayed trees produced 2.8 times as many bushels of apples as the unsprayed ones. It cost 57.5 cents to spray the average bearing apple tree four times. This includes cost of spray material, labor, and depreciation of spray pump equipment.

SPRAY MATERIAL TO USE.

For all insects having biting mouth parts, use lead arsenate paste at the rate of from 2 to 3 pounds to 50 gallons of water, or one-half as much dry lead arsenate.

For all sucking insects, such as plant lice, use one-half pint of nicotine-sulphate (40% nicotine) to 50 gallons of water. When this is used alone add ½ pound of dissolved soap to help make it stick.

For fungus diseases, such as apple scab, 5 to 10 quarts of lime sulphur to 50 gallons of water, or bordeaux mixture which is made up by using 3 to 4 pounds of bluestone with same number of pounds of quick lime to 50 gallons of water. Bordeaux and lime sulphur should never be used together. Bordeaux is considered a better fungicide than lime sulphur, but when bluestone is very high in price the commercial lime sulphur solution is cheaper and is generally used and with very good results. Never use lime sulphur on grapes or potatoes, as it causes severe leaf burning. Lime sulphur is more apt to burn than bordeaux during periods of hot weather. Severe bordeaux injury usually occurs during damp and cloudy weather, when fruit is young and tender.

SPRAYING CALENDAR.

The following spray is applicable for bearing apple, pear, plum and cherry trees. The plum and cherry should be sprayed earlier than the apple, as they bloom earlier. The last of July spray need not be applied to early summer apples, plums or cherries.

First.—Cluster Bud Spray. Spray just as blossoms are showing pink and before they open, for apple scab, curculio, canker worm and other leaf eating insects. Scale insects such as San Jose, Oyster Shell and Curfy, can be controlled with this spray by using the lime sulphur from 4½ to 5½ gallons to 50 gallons of water. The lead arsenate should also be added. Bordeaux will not control scale.

LIME SULPHUR	OR	BORDEAUX
8 to 10 qts. lime sulphur		4 lbs. quick lime (not slacked)
3 lbs. lead arsenate paste or		4 lbs. copper sulphate
1½ lbs. dry lead arsenate		50 gals. water
50 gals. water		(above formula written 4-4-50)
		3 lbs. lead arsenate paste or
		1½ lbs. dry lead arsenate

If aphis (green plant lice) are present add nicotine sulphate (40% nicotine at rate of ½ pint to 50 gallons of spray solution.

Second.—Petal-Drop or Calax Spray. Spray when 95% of blossoms have fallen, for first brood codling moth, green fruit worm, apple scab, etc. Use lime, sulphur (5 qts. to 50 gallons water with 2 lbs. lead arsenate paste or 1 lb. dry lead arsenate).

Third.—First Side Worm Spray. Spray two or three weeks after second spray. This is for "side" worms of the first brood codling moth and further control of apple scab. Codling moth eggs appear about this time. Use 4½ qts. lime sulphur, or 3-3-50 bordeaux, with 2 lbs. lead arsenate paste or 1 lb. dry lead arsenate.

Fourth.—Last Spray. Apply the latter part of July or the fore part of August (7 to 9 weeks after the eggs of the first brood codling moth appear) for the second brood codling moth, sooty blotch, apple blotch, black rot and other fungi. Use bordeaux 4-4-50 as stated above and add 2 lbs. lead arsenate paste or 1 lb. dry lead arsenate to the 50 gals. of solution. It may be necessary to apply a fifth spray 2 to 3 weeks after the fourth for the further control of the second brood codling moth worms.

For more detailed information in regard to spraying the orchard and garden, write to the Agricultural Extension Department, Ames, Iowa.

TO ESTIMATE THE AMOUNT OF SPRAY MATERIAL NEEDED.

The following estimates are made upon the basis of the average 16 to 20 year old apple tree to be sprayed four times:

1. Get the exact number of trees to be sprayed.
2. As many pounds of lead arsenate paste will be required as there are trees to be sprayed or one-half as much dry lead arsenate.
3. One-half as many gallons of lime sulphur will be required as there are trees to be sprayed unless dormant strength is used and then it would require more.
4. Where aphis, or green tree lice, are present at the cluster-bud spray, about 1 pint nicotine sulphate (40% nicotine should be used) to each 15 trees in the orchard.
5. When bordeaux is to be used for the 1st, 3d and 4th sprays, it will require about 1 lb. of copper sulphate and 1 lb. quick lime for each tree. In case bordeaux is used for three sprays, the lime sulphur order will be only one-fourth of above estimate, the lead arsenate remaining the same with whichever fungicid is used.

Order the nicotine sulphate if the aphis (plant lice) were troublesome the year before.

Spray material, spray machinery, apple barrels, boxes and other orchard equipment may be bought more cheaply by joining the Iowa Fruit Growers'

Association (annual membership fee $1.00), R. S. Herrick, Secretary, Ames, Iowa. This association secures low prices on all orchard supplies for its members.

If your community desires an orchard spring pruning and spraying demonstration, write or see your county agent.

SELECTING GOOD LAYING HENS FOR WINTER EGG PRODUCTION.

Entirely too much poultry that does not pay for the feed it consumes is kept thruout the winter months upon the average farms. This is due to several reasons, first, the inability of the farmer to tell with any degree of certainty a good layer from a poor layer; second, the impression that is common in many sections of the country, that the winter months are the resting months for the hens; third, improper management from the standpoint of feeding and housing.

Without question, the good layers in a farm flock can be selected with reasonable certainty without trap nests. There are certain physical characteristics that enable one to distinguish between good and poor layers.

The tendency toward egg production is inherited by all hens; however, the extent of their egg production varies. Some lay only in the breeding season, while others lay thruout the greater part of the year. This may be due to inheritance, but it is also influenced by differences in strength, vigor and vitality in the conditions under which birds are kept.

Good production is manifested in those hens with a sound body that show good vigor and health. These characteristics are shown by a well developed body, bright, clear eye, and a comparatively active disposition. The bird must be free from such defects, as crooked beak, eyelids that overhang so that the bird cannot see well, scaly legs or any other defects that may prevent the bird from obtaining an abundance of food.

THE KIND OF HENS NOT TO KEEP.

It is not advisable to keep for winter layers pullets or hens showing the following characteristics

1. *Slow Growth and Late Maturity.* During the growing season it is well to mark those birds falling behind the average growth of the flock and not keep them for egg production. Late hatched birds, not reaching maturity before cold weather will seldom lay before spring and then in most cases the eggs are small and ill-shaped.

II. Physical Weakness. Indications of physical unfitness for reproduction are:

a. Head: Long, narrow, and lacking depth from top to base of beak. The beak long and pointed, nostrils small. Eyes sunken. Face and comb often pale. Comb small and undeveloped.

b. Body: Narrow, especially through back, lacking in depth. Breast undeveloped and sharp.

c. Legs: Often long and stilt like, or weak, bending at hocks, giving the bird a squatting appearance. Toes long, toe-nails sharp.

III. Lack of Vigor, as shown by:

a. Dull eye and listless appearance.

b. Indications of disease, denoting low resisting power.

c. Lack of energy, inactive.

d. Plumage rough, not well developed.

In order to obtain the best results from any flock, it is necessary to observe the condition of the individual hen at the first indications of physical weakness or defects, the birds should be removed and replaced by individuals showing every indication of good egg production.

CONTRAST BETWEEN GOOD AND POOR LAYERS.

Some of the features which show very clearly the contrast between good and poor layers are as follows:

GOOD LAYERS.

1. Molt late during the last of September, October and November.
2. Molt quickly.
3. Yellow shank varieties show faded beaks, legs and toes.
4. White ear lobed varieties show lobes free from creaminess.
5. Have good width between pelvic bones. Bones are thin.
6. Have rough, ragged and frayed plumage at time of molting.

POOR LAYERS.

1. Molt early in July and August.
2. Molt slowly.
3. Yellow shanked varieties show distinct yellow coloring in beaks, legs and toes.
4. White ear-lobed varieties show lobes that are creamy.
5. Are narrow between pelvic bones. Bones are thick.
6. Have new and best finished plumage in the fall. (Color changes should be observed in daylight.)

As a general rule, when a fowl commences to lay, it will use up the surplus fat in the body. The loss of fat from the skin is readily seen by the lack of yellow coloring. The tendency of the different parts of the body is to become white, this depends somewhat upon the amount of fat stored in the body, and the amount of circulations through that part. The changes can be noticed as follows:

The vent changes quickly with egg production. A white or pink vent on a yellow skinned bird generally means that the bird is laying. A yellow vent, rather contracted, means that a bird is not laying. It should be recognized that all yellow color changes are dependent on the feed, coarseness of skin, size, and age of bird. A heavy bird fed on an abundance of green feed or other material that will color the fat deep yellow will not bleach out nearly as quickly as a smaller or paler yellow bird.

The inner edges of the eyelids bleach out more slowly than the vent, as a general rule. The earlobes on Leghorns and Anconas bleach out a little more slowly than the eyelids. Bleached earlobes mean a little longer or greater production than a bleached vent or eyelids.

The beak will lose its coloring, beginning at the base, and finally extending to the front part of the upper beak. The lower part bleaches faster than the upper. On the average yellow skinned bird a bleached beak means heavy productions for at least the past four to six weeks.

The shanks are slowest to bleach out and hence indicate a much longer period of production than the other parts. The yellow disappears from the scales on the front of the shanks first and finally from the scales on the rear. A bleached shank usually indicates fairly heavy production for at least 15 to 20 weeks.

When the fowl stops laying, the yellow color will reappear in those parts of the body from which it has faded, namely the beak, eyelids, earlobes, vent, shanks and skin of body. As a general rule, this coloring reappears in the same manner as it faded, that is in the case of the beak, the yellow coloring will appear first at base of beak continuing to the tip in the shanks, the fore part of shanks will color before the back part of shank. The reappearance of coloring pigment is much quicker than it went out.

CHANGES IN BODY DUE TO LAYING.

A laying hen has a large, moist vent, showing a dilated condition and looseness, in contrast to the hard puckered vent of a non-laying hen. However, if the vent has slight yellowish coloring and shows good lubrication with a fair degree of dilation, these are indications that the hen has resumed laying after a time, such as molting when she has not produced eggs.

In a laying hen, the width between the pelvic arches or lay bones and the keel is considerable, denoting good capacity. The thicker, the more blunt the pelvic arches, and the greater the amount the hard fat in the abdomen, the less the production or the longer time since production.

If the comb, wattles and earlobes are large, full, smooth or hard and wavy, the bird is laying heavily. If the comb is crisp the bird is laying slightly. When the comb is dried down and covered with a white scale, she is not producing.

MOLTING.

When a hen stops laying in the summer or fall, she will commence molting, as a general rule. The later a hen molts, the longer the period over which she lays. Many times good layers will lay even after they have commenced to molt.

The most active birds are generally the best layers.

If the flock is properly culled, it is necessary to follow certain principles or management, inducive to good production, in order to obtain the full benefits, from the standpoint of egg production.

SOILING CROPS FOR MILK PRODUCTION.

By L. S. Gillette, A. C. McCandlish and H. H. Kildee.

Rapid increase in the price of grains and concentrates, used in feeding dairy cows for milk production, has quickened the interest of dairymen in the feeding problem. The urgent demand for human food has resulted in a more extended use of cereals for that purpose, a practice which has limited quite largely the quantities of grain available for live stock feeding. The curtailment in the use of grain demands that more reliance be placed upon roughages in the ration in order to supply the nutrients required by heavy producing dairy cows. The importance of leguminous hays and corn silage as a basis for any satisfactory winter ration, which has for its purpose the stimulation of the dairy cow to her most economical production and the efficient saving of grain, has been amply demonstrated. However, the practice in so far as summer feeding may be concerned, is more varied.

It has long been realized that the pastures on most Iowa dairy farms do not supply an abundance of feed for the cows during the hot dry summer months. The problem of supplying this extra feed most satisfactorily may be solved through following one or more of the methods here enumerated.

1. Use of larger pastures.
2. Use of larger quantities of concentrates.
3. Use of summer silage.
4. Use of soiling crops.

Larger acreages of pasture land are not always available, though with better care and more thorough management larger quantities of succulent feed may be obtained from the same area. As the land rises in value, however, the cost of feed secured from pastures increases very considerably and this increase is neither sufficient in itself nor always available when needed most and thus dairymen find it a profitable practice to supplement their pastures in the majority of instances. In view of the wide shortage of grain, the heavier feeding of concentrates should be discouraged wherever suitable substitutes may be grown. Experience has indicated that the feeding of grain is usually the most expensive manner by which the deficiencies of pasture may be remedied. It is also essential to use the entire crop rather than merely the grain and thereby save a goodly percentage of the total food produced on the farm.

Supplying green feed is the most satisfactory method of maintaining the flow of milk during the summer when pastures are short; and the green feed may be in the form either of corn silage or of crops especially adapted for soiling purposes. As agricultural methods became more intensified with the attendant greater importance of dairy farming, larger yields per acre must be secured. Pastures will be more largely supplemented by green feed, since much larger quantities of feed may thereby be grown per acre. This will bring about the growing and cultivation of those crops capable of returning the largest yields of palatable and nutritious feed.

ADVANTAGES OF SOILING.

Soiling for dairy cows may be partial or complete, depending upon the availability of pasture. As a supplemental green feed to be supplied in conjunction with pasture, soiling possesses several distinct advantages. Through the utilization of soiling the production of digestible nutrients per acre is increased from three to five times over that produced by pasturing. This is brought about largely by the maturing of soiling crops which permits of larger production. The tramping of stock on pastures, especially during rainy weather, leaves the soil in poor condition, while with soiling crops if the seed bed is carefully prepared the soil will be in excellent condition. The tramping also directly stamps out considerable grass, while the fouling by manure is another source of waste. The operation of these factors makes it possible through soiling to secure larger yields than is true under pasture conditions.

Soiling tends to increase the average production of the milking herd. By furnishing an abundance of palatable, succulent, and nutritious feed at a time when pastures are short, milk production is stimulated. Thus the serious decline in milk production which usually occurs during midsummer is largely eliminated. The production is favored since the cows have at all times an ample feed supply without which maximum yields are impossible. Soiling also contributes variety to the summer ration as the different green crops mature and are fed to the cows, which is a most important factor with high producing animals. Because of the available feed given, the cows are also kept in better physical tone and in a higher condition of flesh which will augur well for the future production of the herd after the soiling period has closed. The health of the animals is more efficiently safeguarded since the crop is usually mature and not apt to be washy and since weeds are much fewer. The combined operation of these forces will promote the production of the individual cows.

Since the production of the individual cows is increased, it follows that the output of dairy products from the farm will be increased. The larger production of soiling crops per acre as compared with pasturage will enable the dairyman to keep a larger milking herd, which in turn ensures an increase in the amount of dairy products.

The liberal use of soiling crops decreases the necessity of a heavy grain ration to dairy cows in summer. It is a well recognized fact that high producing cows can not subsist on pasture alone and maintain their standard of production. Here, soiling crops fill an important place, for they furnish a large share, if not all, of the digestible nutrients required in a succulent feed relished by the cows, instead of forcing the herdsman to resort to dry feeds. This will render extensive purchase of concentrates unnecessary while the production of leguminous soiling crops effectively limits, if it does not entirely prohibit, the use of costly nitrogenous feeds. Thus soiling crops may be used to furnish part, at least, of the nutrients and most of the protein required even by heavy producing cows.

The use of soiling permits of the production of milk which is free from the flavor of garlic or other weeds. Ofttimes stagnant water in pastures as well as decaying organic matter will bring about undesirable changes in milk. Where the land is well cultivated and soiling crops produced, these difficulties encountered in the production of sanitary milk are eliminated.

The saving of divisional fences occasioned by soiling is a factor of importance under some conditions. This permits of the utilization of the land immediately adjacent to the fence row and removes one of the unsightly scenes afforded by many farms.

Finally, soiling permits of the saving or more complete utilization of manure. The waste of fertility on the average farm is quite large. Through the operation of a soiling system the most effective use of barnyard manure is made possible. The hauling out and spreading of the manure now wasted in the barnyards and lanes of this state, would effect a large increase in the productivity of the soil. The actual value of the excreta passed by a cow in a year for fertilizing purposes averages about $45 based on pre-war prices, if all is utilized, which condition may be approached where soiling is practiced.

DISADVANTAGES OF SOILING.

Practical experience has demonstrated that soiling possesses some weaknesses which thus far have inhibited the wide use of this system of summer feeding. Soiling involves a much greater expense for labor than does pasturing. The green feed to be in the most palatable and appetizing condition must be cut daily, which for a herd of 40 cows requires two men and one team for two hours where a partial system of soiling is practiced. Since the amount fed varies from 30 to 100 pounds per cow, the labor involved is considerable, and the regularity required of attendants ofttimes proves irksome.

In addition to harvesting the soiling, the extra time and labor involved in seeding the small plots—at least six to eight sowings being needed to keep the supply of green feed regular throughout the season—is considerable. The labor of handling the manure and caring for the animals from day to day is large, a factor which further augments the labor required in a system of soiling. Coming during the summer season when help is scarce and wages high makes this an important item entering into the cost of soiling crops.

A second difficulty encountered is that of providing a suitable series of crops as well as adjusting the amounts of each to the requirements of the herd. The varying climatic conditions and the consequent changes and inequalities in the rates of ripening of the various crops makes the time at which a given crop may be ready to cut, extremely variable. The average yield and therefore the exact acreage of a crop, essential to supplying sufficient green feed, depends upon the weather.

Where there must be a succession of crops furnishing the soiling, it ofttimes occurs that it is not desirable to utilize any surplus for hay production, which is the only alternative presented. The time at which a soiling crop can be used depends on the individual crop, the time at which it is sown, the soil and climatic conditions. Some crops such as alfalfa, are adapted for use as soiling during a comparatively short period after which the forage becomes too mature for feeding while other crops are available for use through quite a long period. Thus to meet the needs of the herd, changing climatic conditions influencing the yield and time of ripening of the crop as well as the length of time it may be fed is a difficult task worthy of serious study on the part of the dairyman.

Soiling crops must be harvested in all kinds of weather. Frequently climatic conditions render it difficult to haul in green feed daily which is quite a disadvantage in the use of a soiling system. Wet weather not only increases the labor of caring for the crop but it also diminishes its usefulness. Indigestion may result from feeding soiling crops harvested during the rainy period as the feed is of a washy nature at this time, and may occasionally induce bloat. Digestive disturbances may be induced by the particles of soil which adhere to some crops, especially during rainy periods.

CORN SILAGE VERSUS SOILING.

The relative merits of corn silage and soiling crops for supplementing corn belt pastures is a disputed question. Every one appreciates the advisability of furnishing additional succulent feed at this period of the year. Undoubtedly there are conditions under which both feeds may be profitably fed. On the average farm corn silage is a cheaper form of succulence, as it can be produced at a less cost than soiling and is therefore generally the more economical feed. The labor in producing silage comes largely after the harvest work so that help is easier and cheaper to secure. Further, the feeding of silage in summer requires less labor than does the growing and feeding of soiling crops. This factor is of greatest importance where labor is scarce or where the largest production per man is sought.

Where silage is used the farmer is independent of the climatic conditions since the supply is grown the previous year. This retention of part of the corn crop until the succeeding year tends to equalize the quantity of feed available during different years, thereby insuring against losses in milk production due to a scarcity of feed. Since silage is usually under cover, it does not require extra work during rainy weather which also insures against digestive troubles emanating from wet feed.

Silage possesses the added advantage of keeping for a relatively long period of time. While some feed is spoiled by age, the vast portion of it remains in a desirable condition. It does not become unpalatable as do soiling crops when maturity is reached. It does not fluctuate in feeding value from that of a light washy nature to a more mature and dry feed.

The principal disadvantage of summer silage is the small size of silo required. Silage to be of good quality and pleasing taste must be removed twice as rapidly in hot weather as during the winter months. The silo must therefore be much smaller in diameter, involving additional expense in saving the crop. Where a large herd is maintained this will necessitate the building of a number of small silos which are difficult to locate conveniently, as well as being costly to erect.

Since the silage must be fed more rapidly there are many small herds which are not large enough to warrant the building of a summer silo. The small silo costs a great deal more in proportion and in addition permits a much larger proportion of the silage to spoil around the edges of the silo. The small silo not only costs more proportionately but also makes the keeping of good silage more difficult. For this reason many of the causes advanced for feeding summer silage do not apply to the small dairyman.

Lack of variety in the succulent portion of the ration may become evident when silage is fed both summer and winter. This becomes increasingly important as silage tends to become the main part of the succulence during the summer. The deficiency of the corn plant in ash may also prove important unless due attention be paid to the ash content of the other feeds supplied. Furthermore, soiling crops carry a higher percentage of protein which is an important consideration in the corn belt. As dairying intensifies agriculture in a community, it is believed that soiling crops will fit more admirably into the crop rotation as well as the feeding program of the dairy farmer.

PRODUCTION OF SOILING CROPS.

The chief hindrance to the successful production of soiling crops is in keeping a continuous supply of succulent green feed available throughout the summer. The main factor in determining the success of this attempt is the season, but under even favorable conditions, at least four or better still, six individual sowings should be made for a partial soiling system.

Where possible the soiling crops should be put in the regular rotation of the farm, in the place of small grain or corn. If the farm is large or scattered this will not always be practicable and then it will be necessary to grow the green crops continuously on some piece of land located convenient to the barns.

The land for soiling should be well worked and a suitable seed-bed prepared. As large yields are aimed at, liberal use of manure is necessary. This is especially important where continuous growing of soiling is practiced as the production of large yields of green feed year after year tends to impoverish the soil.

Seeding should be liberal—this is most important with crops such as amber cane—for not only will crops be slightly heavier in some cases with heavy seeding, but they will also be much finer in quality. Crops that are seeded thinly tend to produce coarse-stemmed plants which are not relished by stock and result in a large amount of waste. Thick seeding, on the other hand, gives a fine-stemmed succulent forage that is readily cleaned up by the cows with a resultant decrease in waste material.

The harvesting of soiling entails a very considerable amount of labor. The majority of the crops can be cut with a mower and sometimes can be put on the wagon with a hay loader, but where the yield of grain feed is exceptionally heavy the loader will not be suitable. Amber cane can be cut with a small grain binder as it generally stands up well and the bundles are much more convenient to handle than is the loose material. Corn, when used for green feed, should be cut with a binder, if any large amount is used daily.

The green feed, for best results, must be cut and hauled daily as it wilts readily if left cut in the field and if piled up in the barn it heats and spoils quite rapidly in hot weather.

FEEDING OF SOILING CROPS.

Soilage can be fed either on the pasture or in the barn. The feeding of it on the pasture is the much more convenient method, entailing less labor and being cheaper. It has its disadvantages, however. There is a great waste as a rule when the green feed is put out on the pasture, due to the fact that the cows trample and foul it. In addition it dries out rapidly and becomes unpalatable. Where it is spread out the cows are also apt to injure each other in their efforts at feeding. When it is put on the pasture perhaps the best method is to haul it out just before the cows are turned out. Otherwise the cows hang around the gate instead of feeding and when the green feed is taken out the danger of cows being injured is increased.

Feeding in the barn is laborious but on the whole advantageous. The wastage of feed is cut down and in addition the cows are more comfortable in the barn during the hot hours in the middle of the day. When they are kept in at this time they are protected from the heat to some extent and in addition they can be sprayed as a protection against flies.

All of the common soiling crops, with the possible exception of corn, can be conveniently fed in the barn. Owing to its coarse nature it is difficult to feed corn in the mangers unless labor is available to cut the bundles and so it can frequently be most easily fed on the pasture, though this does induce a considerable amount of waste.

Where the soiling is given on the pasture it is usually fed only once a day but when fed indoors from one to three feeds may be given, depending on the amount of labor available and the extent to which soiling replaces pasture in the maintaining of the herd. Generally, however, feeding more than twice a day will not be advisable where some pasture is available.

The amount of soiling used daily depends on the crops grown and the quality and extent of the pasture. With a partial soiling system, such as is most generally used, from forty to seventy pounds of green feed per cow a day will be commonly be consumed in addition to pasture.

In the feeding of soilage care should be taken to avoid the inclusion of large amounts of soil with the green feed. Attention to this point is especially necessary where such sparse growing crops as soybeans are raked into windrows after cutting. Soil particles, adhering to or mixed with the green feed, rendered it unpalatable and tend to cause digestive disturbances. The feeding of soilage that is wet or fermented is another cause of digestive troubles. Care in handling will prevent the heating or fermenting of the green feed but owing to weather conditions, which cannot be forecast, it is not always possible to get feed that is not wet. Where the soiling has been cut when wet it is advisable to limit the amount fed as the wet feed will often produce scours.

CROPS SUITABLE FOR SOILING PURPOSES.

Crops most desirable for soiling purposes will be determined largely by the climatic conditions prevailing in the given community. This factor also affects the yield of forage supplied by the various crops, which is a most important point. Where the yields of different crops are approximately the same, a choice is usually indicated by the relative amount of protein furnished. The palatability of different forages varies widely as does the effect upon the flow and flavor of milk as well as upon the physical health of the cow. It is difficult to secure green forage at some periods of the year and this renders some crops capable of supplying green feed at this time well-nigh indispensable. The time which is required to mature a crop is worthy of study since some of the early crops may be followed by later sowings making it possible to secure two crops from the same acreage in one season. While the ease of harvesting may seem to be a minor point it should be given consideration since the green feed is very heavy and in the case of some crops quite difficult to handle.

A wide variety of crops may be used for soiling purposes in this section. These may be conveniently grouped as leguminous, non-leguminous, and mixed. Owing to the higher content of protein which leguminous crops carry as well as their value as soil improvers, they are advisable in many instances. Their use tends to decrease the purchase of nitrogenous concentrates which are usually the most expensive feeds and may thereby lessen the cost of the grain ration. Leguminous crops do not thrive on acid soils and frequently the application of ground limestone greatly increases the yield as well as the ease of securing a stand. Those legumes not common to the locality or farm also require inoculation Where these two precautions are observed there are few Iowa soils, indeed, upon which legumes will fail to respond to careful cultural methods.

A representative number of the crops that might prove suitable for soiling in this section have been tried out on the Iowa State College dairy farm during the years 1911 to 1917 with interesting results. A larger variety might have been tried but the aim has been to keep the number of crops grown in any one year within the limits of practicability.

In determining the costs of the various crops all items entering into their production have been taken into account, including rent of land, labor, manure, and seed. All operations, from the preparing of the land to the harvesting and hauling of the crop to the barn have been included in the labor cost. Owing to rapidly changing labor conditions it has been deemed advisable to adhere to the uniform rates from which the data were originally calculated rather than to recalculate them. Throughout the work man labor has been charged at $55 per month, horse labor at $2 per team per day, and rent of land at $6 per acre.

LEGUMINOUS CROPS.

Not many of the leguminous crops are specially adapted for soiling purposes under Iowa conditions and so the number tried out here has been limited.

ALFALFA.

This is undoubtedly the most valuable soiling crop among the legumes, since the various cuttings may all be utilized as soiling. Alfalfa may be said to owe its importance as a forage crop to its high nutritive value, being especially rich in ash and protein; to its palatability; to its large total yield where successfully grown; to its drouth resistance; and to its long life, and consequent small cost of seeding. The various cuttings may be timed to keep a continuous supply of green feed available. Alfalfa may be used to furnish green feed during the entire season if a sufficient acreage is available. The period during which it is suitable, however, is limited, since where the cutting is made too early the yield will be decreased, while in the later cuttings the stems may become woody and fibrous, and in additions the succeeding crop may suffer.

The precaution should be taken not to cut the same field more often than it would be cut for hay as otherwise the plant may be seriously weakened and the stand permanently injured. In this section alfalfa frequently proves valuable in the early part of the soiling season. The yields secured are usually large, varying from 10 to 18 tons per acre. Cows do not consume large quantities of alfalfa in the green state as the green feed does not seem to be relished proportionately as much as is the well cured hay. Where alfalfa is grown successfully it may be included in any rational scheme of soiling.

During the seven years in which soiling has been practiced at this station, alfalfa has been used to some extent each year. The first and second cuttings were used. The alfalfa cut for soiling was generally of the previous spring's seeding, having been sown at the rate of 18 pounds per acre along with 1½ to 2 bushels of oats. The first crop was generally obtained about June 10 to 20, while the second cutting came about July 5 to 15. The yield varied with the seasons but was generally satisfactory, the average being 8 tons of green feed per acre for the first cutting and 4 tons for the second.

The costs per ton of this feed were comparatively high, being $3 per ton for the first cutting and $4.50 for the second. The cows seemed to relish it fairly well but did not consume as large quantities of it per head as they did of some of the other feeds.

The main disadvantage of alfalfa as a soiling crop was found to be its short season of availability. If it was cut too early the maximum yield was not obtained and if the cutting was delayed the subsequent crop was decreased. In other respects it was fairly satisfactory.

RED CLOVER.

While this clover is more widely grown in the United States than is any other legume it does not fill an important place in soiling systems. It can be fed for only a very short period as the stems quickly become woody. It does not compare favorably with alfalfa in yield although from 8 to 12 tons are usually secured. Red clover should be cut for soiling shortly before the blossoms appear as at this time it yields more protein, and less fibre per acre than during any other period. Bloating seldom results although it is desirable that the clover be neither wet nor badly wilted when fed. Grown without other crops red clover sometimes goes down, thus making it difficult to harvest. While the second crop may also be utilized for soiling in this section, it is better adapted for hay or pasture, or even, in favorable seasons, seed production purposes.

ALSIKE CLOVER.

Alsike is one of the finer leafy clovers that makes an excellent quality of feed. It is adapted primarily to low wet land, which is insufficiently drained, although it makes a good growth on any average soil. Under lowland conditions alsike grows most luxuriantly and is a very satisfactory legume. It is widely used in this state although seldom grown alone for soiling purposes because the yield may be somewhat below that of red clover and the plant tends to lodge. Alsike soiling is quite palatable, it may be fed in large quantities and it exerts a favorable influence on the milk yield, while the plant is hardy throughout the state.

SWEET CLOVER.

The relative value of this plant for soiling is in dispute, many reporting that it was not entirely satisfactory for soiling purposes, while others have lavished praise on it. The stems rapidly become woody and the feeding period is relatively short. Yields secured may vary from 8 to 15 tons but as a soiling crop it does not have a large place in this section, unless the cattle become accustomed to and eat it with apparent relish.

Sweet clover was used as soilage at this station in but one season with fairly satisfactory result. It was sown with oats in the spring of the previous year at the rate of 15 pounds per acre along with 1½ to 2 bushels of oats. The first cutting was obtained from June 7 to 17 and the second from July 24 to 27. The yields were 5 tons per acre for the first cutting and 2 tons for the second. The costs were respectively $2.80 and $3.60 per ton for the first and second cuttings laid down in the barn. The amounts eaten by the cows were practically the same as of alfalfa; 35 pounds per head daily for the first cutting and 39 pounds for the second. In feeding value it was similar to alfalfa. At first it was unpalatable though not so much so as might have been expected.

CANADIAN FIELD PEAS.

This annual legume is not valuable as a single crop because the yield is usually less than 7 tons per acre. The stem are of light and slender growth and do not support the plant. It is hardy, however, under Iowa conditions, and is often used in mixtures with good results, as the green pea forage is very palatable and is consumed in large quantities.

COWPEAS.

Cowpeas are better suited to the more southern states than to Iowa. They are matured successfully in Iowa only when the small early varieties are sown and then the yield is small. The crop furnishes palatable forage during the latter part of the season.

SOYBEANS.

This crop is well adapted to Iowa conditions. In feeding value soybean forage compares favorably with alfalfa and the plant is more resistant to heat and drouth. Where clover kills out, soybeans may be used as a catch crop, although where the ground is foul, cultivation is necessary to keep down the weeds. The crop, which is becoming more widely used in this state, matures for soiling during the latter part of the summer and will ordinarily yield from 3 to 10 tons of green feed. For best quality of soiling, the seeding should be heavy, 1½ bushels being recommended.

Trials with soybeans at this station as soiling have been made in two seasons with but fair success. In the first year in which they were used part were drilled in rows 3½ feet apart at the rate of 25 pounds per acre and cultivated, while part were drilled in rows 1 foot 9 inches apart at the rate of 50 pounds per acre and left uncultivated. The yields obtained were respectively 3 tons and 6 tons of green feed per acre and the respective costs per tons were $4.60 and $2.70 which was decidedly in favor of the plot heavily seeded without subsequent cultivation. The date of seeding was June 1 and of harvesting August 25 to 30.

In the second trial they were drilled on June 21 at the rate of 45 pounds per acre and were harvested August 24 to 31, when a yield of 5½ tons of green feed per acre was obtained at a cost of $3.00 per ton.

As a feed soybeans were satisfactory as the initial unpalatability soon disappeared and cows would consume about 70 pounds of them per day. There were drawbacks to their general use. The most profitable yields were obtained when they were closely sown and uncultivated, but this, along with their lack of height led to a heavy growth of weeds—a condition that is not at all desirable. In addition they are difficult to cut and collect without becoming mixed with a large amount of soil and this is disagreeable especially in wet weather and may even induce digestive disturbances among the cows.

LEGUMINOUS SOILING CROPS UNSUITED TO IOWA.

In addition to the crops already mentioned a large number of other legumes have at times been proposed for soiling purposes. Some of these which are not suited to Iowa conditions are mammoth red and crimson clovers, sainfoin, flat peas, and the common and hairy vetches.

NON-LEGUMINOUS CROPS.

The non-leguminous forage crops provide an even greater variety of soilage than do the leguminous. Under the majority of conditions they will produce larger and more economical yields of green feed than do the legumes though they do not provide as much protein or ash. Like the legumes these crops vary widely in palatability and in the ease of harvesting. Some of them are essential to a complete system of soiling in this latitude.

DENT CORN.

This is used as soiling to some extent in this locality as it returns rather a large yield and is quite palatable. It is, however, rather difficult to handle and feed, and is not cleaned up very well by the cows. In this locality green corn can not be safely fed until rather late in the summer, from which time it may be fed until ready to cut for silage. It should be borne in mind that by feeding green corn the cow is not given much of a variety as compared to her winter ration.

Part of the corn crop was used for soiling on several occasions in the latter part of the season. Yields of 9 to 12 tons of green feed per acre were obtained at an average production cost of $2.70 per ton. It gave good and economical yields and was palatable and successful as a feed.

SWEET CORN.

Sweet corn is perhaps the most palatable of the corns and is used more for soiling than the other kinds. In yield it ranks close to that secured from dent corn, where the larger varieties are used, and is more satisfactory, since it stays green longer, and the leaves do not fall so quickly. Neither does it become so coarse nor is it so difficult to feed as is dent corn. It furnishes good soilage even when the ears have been removed previous to feeding, a practice followed near canning factories. The length of the feeding period will depend upon the number of varieties grown and may extend throughout a considerable part of the late summer.

OATS.

Oats alone were used for soiling on but one occasion. This was a patch of oats sown for grain but beginning to lodge. The yield of 7 tons of green feed per acre was obtained at a cost of $2.90 per ton. However it was not very palatable and the cows refused to eat large quantities of it. It also ripened too rapidly to be a good soiling crop.

WINTER RYE.

Rye has been used more for soilage purpose than any other of the lesser cereals. It gives fair yields, averaging perhaps 6 tons per acre; is only fair in palatability and can be used very early in the season for soilage purposes. Under some conditions rye has been known to import a peculiar and disagreeable flavor to the milk. It is perhaps more valuable for early pasture than for soiling purposes.

FOX-TAIL MILLET.

The various varieties of fox-tail millet include Common, German, and Hungarian, as well as many others. These varieties have been used successfully by many stations to furnish soiling crops for cows, inasmuch as they may be matured rather late in the fall and may be used until frost. Yields vary, but on the average where a thick seeding of millet prevails, from 10 to 14 tons of green forage are not uncommon. The value of the millet forage are not uncommon. The value of the millet forage depends largely upon the variety. For example, the common millet is fine stemmed and leafy, and makes a very good quality of forage, while the German variety is coarser than the common and not relished as much by the milch cows. Millet matures rather rapidly and under the most favorable circumstances is ready for harvesting forty to fifty days after seeding. In order to secure the best quality of forage, heavy seedings are advisable as two to four pecks have given the best results.

AMBER CANE.

Amber cane is one of the most valuable soiling crops for this section. The yield is quite large and under average conditions 10 to 16 tons per acre may be secured. It is succulent and palatable and cows will consume large quantities of it. It may be used over a long period of time without becoming coarse or woody. It can also be produced at a lower cost per ton than any other crop grown for silage purposes in this section. Seeding should be fairly heavy to insure fine growth of cane, as the finer and less fibrous the crop grows, the higher will be the palatability and the smaller the waste. Experience indicates that at least 70 pounds of seed should be sown per acre, and 90 pounds will produce finer forage.

The main drawback which has been found in the use of cane for soiling is the difficulty of handling the crop. Where it is thickly sown so that the crop does not become too coarse it may be cut with a small grain binder with little difficulty. It should be mentioned that the second crop is apt to be poisonous after it has been frosted or markedly checked by dry weather. In this part of the state, however, there is but little second crop produced.

Amber cane has been grown alone at this station for the last three years and has given excellent results. From two to three sowings per season were made from about May 20 to July 10 at the rate of 70 pounds per acre. The season of harvesting covered the period from about July 20 to the end of October. The yields obtained were larger than those of any other crop—averaging 12 tons of green feed per acre—and the cost of production was also low, being between $2.00 and $2.25 per ton.

The cows relished it and ate on the average of about 70 pounds of cane per day. It proved to be the most successful soiling for the latter part of the season and could be used until the time of frost.

SUDAN GRASS.

This crop is especially suited to the arid and semi-arid regions altho it is being grown to some extent in this state. It gives rather large yields of feed but dries out very rapidly while growing and is apt to become fibrous when mature, a fact which decreases its palatability and detracts from its value as a soiling crop. Under some conditions Sudan grass may be profitably used although usually other crops can be more successfully grown for soiling purposes in this state.

It has been grown at this station on a few occasions and given good yields, the average being 11 tons of green feed per acre at a production cost of $4.00 per ton. It was sown in the latter part of May and used from August 25 to September 10. It was a palatable and useful feed when not too ripe but dried out very rapidly and so did not have a very long period of usefulness.

NON-LEGUMINOUS SOILING CROPS UNSUITED TO IOWA.

The wide range of non-leguminous crops makes it impossible to treat all of them individually. Many forages not heretofore mentioned have direct value for soiling purposes, although they are not primarily suited to Iowa conditions. The more common of these are flint corn, oats, barley, wheat, Japanese and pearl millets, orange cane, milo maize, feterita, kafir-corn, timothy, red top, brome, and orchard grass.

MIXED CROPS.

Mixtures of leguminous and non-leguminous forage crops have been widely grown for soiling purposes. Many of these mixtures have much to recommend them since they possess many good characteristics of each of the other two classes. Their value depends upon the suitability of the crops for the locality in which they may be grown and upon their adaptability for growth in mixtures. While a great many mixed forages have been grown the number which are really suited to farm conditions in this section is quite limited.

OATS AND CANADIAN FIELD PEAS.

This is one of the most valuable of the early soiling crops. Both are well adapted for this locality and when grown together give moderately large yields of very palatable feed. When the oats are in the milk and the peas have filled the pods, the crop is most desirable and it should be utilized as fast as possible at this stage as the crop ripens rapidly with the feed becoming less palatable. By making two or three sowings of this crop it is usually possible to secure a plentiful supply of green feed for a period of about 30 to 40 days. One of the difficulties which is experienced in growing this crop is that the oats have a tendency to ripen before the peas. This can be overcome to some extent by using a late variety of oats, and if necessary, sowing them a week or ten days after the peas have been drilled. Oats and peas are of sufficient value for soiling purposes to warrant the statement that they should be included in soiling crop systems for this state.

This crop has proved to be of the greatest service in the early part of the season. Two or three sowings were usually made between April 5 and May 10 at the rate of 1½ bushels oats and 1½ bushels peas per acre. The season of availability lasted from about June 20 to the end of July. The yields obtained varied from 5 to 10 tons per acre, the highest yields of green feed being from the early or medium early sowings, and the production cost per ton varied from $2.50 to $5.00 according to the season and the yield obtained.

This feed was very palatable in the early stages but was usually fed in limited quantities as pastures were then fairly good. From 40 to 60 pounds per head per day was the average consumption of oats and peas. Owing to its early ripening tendencies it was suitable for use in the early part of the soiling season only.

OATS AND COMMON VETCH.

This mixture has been recommended in some cases in place of oats and field peas but as the yield is usually not as large a with the peas and owing to the extremely high price of vetch seed at the present time, its use in this connection can hardly be considered practical.

BARLEY AND CANADIAN FIELD PEAS.

This crop is quite similar in value to the oats and peas but possesses the disadvantage of the barley ripening even earlier than does the oats. In some sections it is possible to use this crop for fall feeding by sowing the barley and peas after one of the early forage crops have been harvested. In this way it is possible to utilize the ground for two crops during the same season and thus barley and field peas may be used to give a liberal supply of forage during the autumn.

WINTER RYE AND HAIRY VETCH.

This mixture has given good results, as the vetch increases the yield, and the protein content of the forage. Owing to the high price of vetch seed, it may not be extensively used as the cost of seeding is too great. The rye also serves to help support the vetch and maks the crop easier to harvest. This mixture will furnish green feed earlier in the spring than any legume or other mixed crop. On farms where no pasture is available, it may be wisely used.

COWPEAS AND CORN.

This crop has been used for soiling purposes in some sections, and particularly in the south, where it will give heavy yields. Where the corn is drilled thickly, however, as is practical for soilage purposes, cowpeas oftentimes do not make a large growth, especially during dry seasons. On the average, therefore, while cowpeas may increase the protein content of the feed it does not greatly increase the yield and since corn is not widely used for soilage the crop has not come into general use.

COWPEAS AND CANE.

As has been previously mentioned, fodder cane makes an excellent crop for soiling purposes. From actual experience some men have stated that it can be improved by sowing in mixture with cowpeas since the protein content will be increased. However, where the amber cane is sown thickly so that the stalks do not become too coarse the cowpeas usually do not make much growth. Larger and more economical yields of forage can usually be obtained by sowing the cane alone rather than by adding cowpeas. The mixture is palatable and eaten readily by the cows with but little waste where fed in a manger.

This mixture has been tried on several occasions at this station, and though it was a good feed the sowing of the cowpeas proved to be simply an additional expenditure. Though the cowpeas were valuable for increasing the nitrogen content of the soil and adding protein to the feed, they were readily crowded out by the cane. The time of sowing and of harvesting was the same for the cane and cowpeas as for the cane alone. The yields obtained were slightly lower in the case of the cane and cowpeas and the cost per ton slightly higher.

SOYBEAN MIXTURES.

Soybeans have been grown in various combinations in much the same way as have the cowpeas. They are more desirable for use in mixtures than the cowpeas as the plants are better adapted to Iowa conditions, and are equally palatable. Soybeans have also been grown in mixtures with cowpeas but for this locality other forages will give more satisfactory results.

CLOVER AND TIMOTHY.

Red clover and timothy have been used for soiling purposes. The value of the crop is usually enriched by adding alsike to the mixture. Under the majority of conditions, however, it will be found more satisfactory to mature this crop for hay rather than to attempt to feed it green. It is not as palatable as some of the other crops and does not yield heavily, which renders it less suitable for soilage purposes.

SUMMARY OF RESULTS SECURED.

The results secured are summarized in Table I, where the average yield, cost per ton, and other production data for the crops used are given.

In connection with the summary of the soiling system practiced at the Iowa State College dairy farm it will be convenient also to discuss the pasture which was available for the milking herd. The pasture land is rolling and gravelly and was at one time poor but by liberal manuring and supplementing with soiling crops it has been converted into a comparatively good pasture. On this twenty acre pasture, supplemented with soiling, have been supported an average of more than 40 cows each season.

TABLE II—AREAS USED FOR PASTURE AND SOILING.

Year	No. of cows	Pasture acres	Soiling acres	Pasture days	Soiling days	Soiling per cow tons
1911	40	20	9	165	127	1.47
1912	41	20	6	170	98	1.42
1913	42	20	10	167	108	1.26
1914	42	20	10	165	108	1.85
1915	40	20	10	177	116	2.14
1916	40	20	20	173	97	1.87
1917	47	20	22	152	126	3.50
Average	42	20	12	167	111	1.93

The amount of soiling used depended to a considerable extent on the season and the amount of land available for this purpose, but on the average it amounted to about 12 acres. These factors along with the lengths of the pasturing and soiling seasons determined the cost of keeping the herd during the summer. The average acreage of soiling and pasture combined required to support a cow for the summer months was eight-tenths of an acre per season. The average cost of this was $8.60 per cow per season, of which $5.30 was due to soiling and $3.30 to pasture. If the cows had been supported on pasture alone, from two to three acres per cow would have been required with a subsequent cost of $12 to $18 per cow per year. This is a saving which is decidedly in favor of soiling, and in addition to this, increased milk production results from its use.

POSSIBLE OUTLINES OF SUITABLE SYSTEMS OF SOILING.

A few possibilities of crop combinations may be suggested and they can easily be modified to meet individual conditions:

TABLE 1 SUMMARY OF SOILING CROPS GROWN ON IOWA STATE COLLEGE DAIRY FARM, 1911-1917.

CROP	Approximate date of sowing	Rate of seeding per acre	Approximate date of harvesting	Yield per acre tons	Cost per ton	Feed per cow per day lbs.
Alfalfa	Previous year	18 lbs.	June 10-20	8	$ 3.00	35
Alfalfa	Previous year	18 lbs.	July 5-15	4	4.50	40
Alfalfa	Previous year	18 lbs.	Aug. 20-25	2	5.00	30
Sweet Clover	Previous year	15 lbs.	June 5-15	5	2.80	35
Sweet Clover	Previous year	15 lbs.	July 25-30	2	3.60	40
Soybeans	June 1	50 lbs.	Aug. 25-Sept. 15	6	3.00	55
Amber Cane	May 20	70 lbs.	July 20-Aug. 20	12	2.25	70
Amber Cane	June 20	70 lbs.	Aug. 15-Sept. 20	12	2.00	70
Amber Cane	July 10	70 lbs.	Sept. 10-Oct. 30	12	2.00	70
Oats	April 5	1½ bus.	July 5-15	7	2.90	45
Dent Corn	May 10	9 lbs.	Oct. 1-10	10	2.70	40
Sudan Grass	May 25	20 lbs.	Aug. 25-Sept. 10	11	4.00	40
Oats and Canadian Field Peas	April 5	1½ bus. oats and 1½ bus. peas	June 15-July 5	6	5.00	40
Oats and Canadian Field Peas	April 20	1½ bus. oats and 1½ bus. peas	June 30-July 10	5	4.50	50
Oats and Canadian Field Peas	May 5	1½ bus. oats and 1½ bus. peas	July 10-25	5	4.00	60
Amber Cane and Cowpeas	May 25	35 lbs. cane 1 bu. cowpeas	Aug. 1-30	9	2.50	45
Amber Cane and Cowpeas	June 25	35 lbs. cane 1 bu. cowpeas	Aug. 15-Sept. 5	13	2.00	45
Amber Cane and Cowpeas	July 5	35 lbs. cane 1 bu. cowpeas	Sept. 1-20	9	2.00	45

The areas given are those that should prove suitable with a herd of about 15 cows provided that ten acres of pasture were also available.

SYSTEM A.

Crop	Area acres	Approximate date of sowing	Approximate date of harvesting
Alfalfa, 1st cutting	½	Previous year	June 10-20
Oats and Canadian Field Peas	1	April 5	June 15-July 5
Oats and Canadian Field Peas	½	April 20	June 30-July 10
Alfalfa, 2d cutting	½	Previous year	July 5-15
Oats and Canadian Field Peas	½	May 5	July 10-25
Amber Cane	1	May 20	July 20-Aug. 20
Amber Cane	1	June 20	Aug. 15-Sept. 20
Amber Cane	1	July 5	Sept. 10-Oct. 15

This is a simple and convenient system but it is adaptable to further simplification and modification. Where alfalfa is not available, the other two crops, amber cane and oats and Canadian field peas, can be made to last throughout the season. In some cases it will also be possible to cut down the number of sowings of these crops and make larger plots. Four is the smallest number of sowings that can be expected to give good results and five or six are better as they insure a more uniform supply of green feed throughout the season. This is due to the minimizing of the risk of too early maturing of the crops with subsequent unsuitability of the feed for soiling. Sweet clover can also be used in place of the alfalfa where it is available.

SYSTEM B.

Crop	Area acres	Approximate date of sowing	Approximate date of harvesting
Winter Rye	1	Previous fall	June 1-20
Barley and Canadian Field Peas	1	April 5	June 15-July 5
Barley and Canadian Field Peas	1	April 20	July 1-20
Amber Cane	1	May 20	July 15-Aug. 20
Amber Cane	1	June 25	Aug. 15-Sept. 20
Millet	1	July 1	Sept. 15-Oct. 15

In this system winter rye is depended on for the earliest soiling, while barley replaces oats in the mixture with Canadian field peas and the millet takes the place of the last sowing of amber cane used in the previous system. For the reasons pointed out in the section on individual crops this is not quite so suitable as the first system and it is also less easily varied and adapted to individual conditions.

SYSTEM C.

Crop	Area acres	Approximate date of sowing	Approximate date of harvesting
Oats and Canadian Field Peas	1	April 5	June 10-July 5
Oats and Canadian Field Peas	1	April 25	July 1-25
Amber Cane	1½	May 20	July 20-Aug. 25
Amber Cane	1½	June 25	Aug. 15-Sept. 15
Green Sweet Corn Stover	1	June 10	Sept. 10-Oct. 15

This system would not provide feed as early or late in the season as would some of the others, but it would be quite simple and suitable where sweet corn was being raised. Dent corn could also be used in the late part of the season.

These are merely outlines and can be altered or interchanged as is necessary. The approximate yields to be expected can be seen from the table already provided

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CANNING BY THE "COLD PACK" METHOD.

By E. C. Bishop.

All fresh fruits, vegetables and meats may be successfully canned by the "cold pack" method.

HOW IT IS DONE.

There are two parts to the cold pack canning process:

Part I—Packing the uncooked product in the jar.

Part II—Cooking the packed product in a hot water bath.

This method is easily learned by anyone who will follow the directions carefully. Following are the steps of procedure:

1. Secure sound, fresh products.
2. Clean and trim the products.
3. "Scald" or "blanch" as directed.
4. "Cold dip" immediately.
5. Pack the product in the jar.
6. Add hot water or syrup.
7. Adjust rubber and cover on the jar.
8. Partially seal the jar.
9. Cook in hot water bath.
10. Remove from bath and complete the seal.

EQUIPMENT NEEDED.

The ordinary home already has the equipment. The necessary articles are:

1. The regular fruit jars, including the screw top, glass top with wire bails, vacuum top jars and good rubbers which fit the jars used. Tin cans may also be used.

2. "Sterilizing vessel" for hot water bath. This may be a flat bottom kettle, a wash boiler, a lard can, a clean garbage can, a metal peck or half bushel measure, a pail, a milk can, or any other container deep enough to hold the jars set in a vertical position, with sufficient room below for water to circulate underneath the jars, and room above so that the jars may be covered by at least an inch of boiling water. The size of the vessel otherwise is governed by the amount of product to be sterilized each time.

3. A rack or "false bottom" to place in the bottom of the sterilizing vessel on which the jars may be set. This may be any kind of frame work that will hold the jars at least one-half inch above the bottom of the kettle to permit free circulation of water under the jars and prevent jars from coming in direct contact with the heated bottom of the kettle. A

piece of stiff wire netting cut to fit the container, with the edges beaten down, a wire tea stand, or a rack made by fastening some wire netting to two small cross pieces does very well. A piece of stiff woven wire, fastened to a metal rim, makes an excellent false bottom.

4. One vessel for hot water, into which the product may be lowered for scalding or blanching.

5. One vessel for cold water, into which the product may be lowered for the "cold dip."

6. A jar lifter for placing and removing jars from hot water bath. This may be a piece of heavy wire, a fork, or other device with the lower end turned so as to slide under the edge of the jar.

7. Other kitchen equipment ordinarily used in preparing the product. A wire basket or piece of cheese cloth or thin muslin may be used for blanching or scalding the product. Plenty of clean hot water should be available. Use the kitchen stove or other means provided for home cooking. Use the equipment you have unless you find it pays, as a matter of convenience or speed, to devise or secure something else.

No Preservative Needed: No canning powder, vinegar, salt, sugar or any other preservative is needed. If the product is cooked in closed jars in the hot water bath as directed, the food will be sterilized so that it will keep indefinitely. If it is desired to flavor the product by adding some salt, sugar syrup, vinegar or other flavor, this may be done when the product is packed in the jar.

PROCEDURE.

1. *Select sound, fresh ripe product.* Take the product directly from the garden, field or orchard. Avoid using a product which has been gathered more than 5 or 6 hours.

2. *Clean and trim the product.* Clean it as you would for use. That is, remove skins, pits, cores, seeds, roots, silks and trim pods; cut in halves, fourth, eight, in cube, or can whole, as you may want to have the product when it is to be used.

3. *Scald or blanch.* To "scald" means to immerse the product in boiling water a very short period to loosen the skin. "Blanching" means to immerse the product in boiling water for a longer period to reduce bulk, remove objectionable acids or flavors, and help with sterilizing. Tomatoes and peaches should be scalded only long enough to loosen the skins. The degree of ripeness and other conditions of product determine the time necessary. The time table gives approximate time for scalding and blanching different products.

HOW. Have a kettle of boiling water handy. Place product in wire basket, thin towel, or cheese cloth; lower in boiling water. Remove promptly as indicated by time table for blanching, or when skins are loosened in scalding. If scalded or blanched too long,, the products will be too much cooked for best results. The "cold dip" follows immediately.

4. *Cold Dip Immediately.* To "cold dip" lower the product immediately from the hot water into cold water. To cold dip helps to separate the skin from the product, helps to keep the coloring matter, firms the texture. The

sudden change from hot to cold helps to destroy bacteria and spores and cools the products so it is easier to handle. Remove product from cold dip at once.

5. *Pack Product in the Jar.* The jars, tops and rubbers should all have been made ready so that product can be packed in immediately. It is best to have glass jars hot so they will be properly tempered to go into the "hot water bath" as soon as packed. Be sure that the rubbers and tops are good ones and that there are no rough, uneven edges where the sealing takes place, between the jar and the top. Pack products well so as to have a well filled jar when completed.

6. *Add Hot Water and Syrup.* After the product is packed in the jar, complete the filling of the jar by pouring in hot water or syrup. Generally, hot water is used with vegetables and syrup with fruits, except with tomatoes, when no liquid is needed. Water may be used with fruits if desired. The syrup is made by dissolving sugar in water and bringing to a boil. The proportion of sugar to water is governed by the taste. The syrup is really a seasoning to be determined by the flavor desired.

7. *Adjust Rubber and Cover.* Place rubber; see that it lies flat and fits well. Place cover; be sure rubber and top are good ones.

8. *Do Not Completely Seal Glass Jars.* With screwtop jars, screw cover on, then turn cover back just a little (about one-half inch), just enough to loosen it so that when heated the steam may escape. With spring sealing jars, have top spring in place, but leave the side spring up. With vacuum seal jars, place cover and spring in place, to hold it on. The spring will release the cover enough to allow for escape of steam. If covers are too tightly adjusted, expansion from heating may blow the rubber out or break the jar.

9. *The "Hot Water Bath."* As soon as the jar is packed and partially sealed, place it immediately in the hot water bath for sterilizing. There is advantage in having the water in the bath boiling when jars are set in. If they have been filled with boiling water or hot syrup, no breakage will occur. Use good judgment in this. If jars seem hot enough to place in hot water bath immediately without danger of breakage, set them first in warm water to temper them.

Cook products as per time table. Do not begin counting time until the water is at a jumping boil. If undercooked, the product will not keep; if overcooked, the product may lose flavor, color and texture.

10. *Remove from Bath and Seal.* As soon as the product has cooked at a boiling temperature the number of minutes indicated by the time table, remove the jar from the bath, examine rubbers and complete sealing the jar. Screw top down, put clamp down, or otherwise complete the seal according to the kind of jar used.

Protect glass jars from draft when removing from bath to avoid breakage. Set jars where they will cool without disturbance until seal sets.

Cautions: Follow directions faithfully. Be sure to completely sterilize the product. Be sure of a perfect seal. Use good judgment all the time and you will have a superior canned product that will keep indefinitely.

Canning Clubs, Canning Recipes, Information. Inquire of your County Club Leader, County Agent, County Superintendent of Schools, or write to the Agricultural Extension Department, Ames, Iowa, for information concerning organization of canning clubs and the circulars giving canning recipes, instructions and complete directions for canning club work by the "cold pack" method.

TIME TABLE.

For Scalding or Blanching and for Sterilizing, in "Cold Pack" Canning.

Products	Scald or Blanch Minutes	Cook in Hot Water Bath or Boiling Temperature Minutes
Apples	1½	20
Apricots	1 to 2	16
Blackberries	No	16
Cherries	No	16
Currants	No	16
Gooseberries	No	16
Grapes	No	16
Peaches	1 to 2	16
Pears	1½	20
Pineapple	10	30
Plums	No	16
Raspberries	No	16
Rhubarb	No	10 to 16
Strawberries	No	8 to 16
Greens, Roots, Tubers		
Asparagus	2 to 4	90
Beets	6	90
Cabbage or Sauerkraut	6 to 15	90
Carrots	6	90
Cauliflower	3 to 6	90
Dandelions	10 to 15	90
Greens, all other kinds	10 to 15	90
Parsnips, Turnips, etc.	6	90
Pumpkin	X	60
Spinach	10 to 15	90
Squash	X	60
Sweet Potatoes	6	90
Other Vegetables		
Beans (Lima or String)	2 to 5	120
Corn (on cob or cut off)	5 to 15	180
Peas	2 to 5	120
Tomatoes	1 to 3	22

X. First cook 30 minutes in open kettle to reduce milk.

See Canning Club literature for special recipes and directions.

A more complete bulletin on the "cold pack" method of canning will be issued by the Agricultural Extension department and will be sent on request.

PART X

Annual Report of the Iowa Weather and Crop Service Bureau for 1918.

CHARLES D. REED, Director.

For convenient reference and comparison with past and future years, this report contains the summaries of the monthly and weekly bulletins of the Iowa Weather and Crop Service in cooperation with the Weather Bureau of the United States Department of Agriculture for the year 1918.

The regular meterological, climatological and crop statistical work of the Service was maintained at as high a standard of efficiency as possible with the frequent changes in personnel, due to war causes and the lack of trained assistance. The changes in personnel were numerous among the cooperative observers and crop correspondents. Resignations and deaths resulted in closing a few stations.

Increased cost of publication caused considerable curtailment of mailing lists to keep within the appropriation, which has remained the same for more than 20 years. Sixteen thousand copies of the monthly Climatological Reports, and 22,500 copies of the Weather-Crop Bulletins were distributed during the year. Five hundred copies of the monthly reports are distributed each month through the Weather Bureau, U. S. Department of Agriculture, to scientific Institutions and libraries in this and foreign countries.

The daily weather forecasts were distributed by telegraph at the expense of the U. S. Weather Bureau to 78 towns, by franked mail to 1,918 addresses, by rural delivery to 819 addresses, and by free telephone to 131,272 subscribers. Frost warnings are sent, in case of necessity, during the fruit blooming season, to all orchardists in the State who are prepared to use orchard heaters in case of frost or injurious temperatures.

CLIMATOLOGY OF THE YEAR 1918.

The mean temperature, 49.2°, is 1.8° above normal. All months were warmer than normal, except January, April, July and September which were deficient in temperature. The highest temperature, 113°, at Clarinda, on August 4, equaled the 29-year record for the State. The period, July 25 to August 13, was abnormally dry and hot and caused serious damage to the corn crop, particularly over the southwest one-third of the State. The total precipitation averaged 32.78 inches, or 0.81 inch above normal. The precipitation was considerably in excess of normal in the north-central counties and markedly deficient in Pottawattamie and adjoining counties.

The season advanced rapidly in the spring, harvest began about 10 days early and conditions were favorable for all crops till the heat and drouth period above mentioned. Though September was cold, dry and unfavorable for fall seeding, a large acreage of wheat was seeded, and favorable conditions in the other fall months caused wheat and rye to make good growth and enter the winter in excellent condition. Corn was of excellent quality; 90 per cent was husked by December 1 and nearly all by the close of the year. Very little was marketed because of unusually bad roads. Generally favorable weather in all seasons, offset in large measure, the labor shortage, due to the war.

Barometer (reduced to sea level). The average pressure of the atmosphere for the year was 30.01 inches. The highest pressure was 31.07 inches, at Sioux City, on February 21st. The lowest pressure was 29.02 inches, at Charles City, on February 14th. The range for the State was 2.05 inches.

Temperature. The mean temperature for the State was 49.2° or 1.8° above the normal. The highest annual mean was 53.1°, at Keokuk, Lee County. The lowest annual mean was 45.0° at Estherville, Emmet County. The highest temperature reported was 113°, at Clarinda, Knoxville and Shenandoah, on August 4th. The range for the State was 149°.

Precipitation. The average amount of rainfall and melted snow for the year was 32.78 inches, or 0.81 inches more than the normal, and 4.97 inches more than the average for 1917. The greatest amount at any station was 47.53 inches, at Nora Springs, Floyd County, and the least amount was 21.44 inches, at Omaha, Nebr. The greatest monthly precipitation was 11.98 inches, at Gilman, Marshall County, in May. The least amount was a trace, at Harlan in the Central Division in March. The greatest amount in any 24 consecutive hours was 5.37 inches, at Monroe, on June 24th. Measurable precipitation occurred on an average of 92 days, 10 days more than in 1917.

Snowfall. The average amount of snowfall was 33.6 inches. The greatest amount reported from any station was 55.5 inches at Lacona, Warren County, and the least amount was 17.8 inches at Rock Rapids, Lyon County. The greatest monthly snowfall was 27.8 inches at Le Claire, Scott County, in January.

Wind. The prevailing direction of the wind was southwest. The highest velocity reported was 60 miles an hour from the west at Sioux City, Woodbury County, on May 9th.

Sunshine and Cloudiness. The average number of clear days was 173; partly cloudy, 97; cloudy, 95; as against 171 clear; 98 partly cloudy, and 96 cloudy days in 1917. The average percentage of the possible amount of sunshine was 61 or about normal.

MONTHLY SUMMARIES.

JANUARY.

January, 1918, was severely and almost continuously cold—only January, 1912, being colder. The mean temperature of the 62-day period, December 1, 1917 to January 31, 1918, 11.6° is the coldest of the 28 similar periods since statewide records began, and 2.5° colder than the former record period, December, 1892-January, 1893. The deficiencies in temperature for January were greatest in the southeastern and west-central counties. Precipitation, mostly snow, averaged about normal for the State, but was excessive in some of the Mississippi River counties and deficient in portions of Boone, Carroll, Dallas and Guthrie counties and southwest to the boundaries of the State. The ground was snow-covered, continuously over about the eastern one-third of the State, less than 20 days in Crawford, Carroll, Greene and Boone counties, and less than 10 days toward the close of the month over most of Boone county.

The condition of winter wheat has not changed much, being fair in the southeastern counties and varying much in small adjacent areas in other sections. With the prevailing methods of culture, wheat fields were generally blown bare of snow by the winds, though the surrounding country remained snow-covered. About 8 per cent of the corn is still unhusked. Cold and snowy weather impeded rail traffic; and because of the car shortage, little corn was shelled. Live stock is generally reported in good condition, though fed to capacity on the soft corn which has little more than half the usual feeding value.

Pressure. The mean pressure (reduced to sea level) for the State was 30.03 inches. The highest recorded was 30.82 inches, at Sioux City, on the 31st, and the lowest was 29.34, at Dubuque, on the 12th. The monthly range was 1.48 inches.

Temperature. The mean temperature for the State, as shown by the records of 97 stations, was 8.6°, or 9.3° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 5.9°, or 8.7° lower than the normal; Central, 8.9°, or 9.3° lower than the normal; Southern, 11.1°, or 9.8° lower than the normal. The highest monthly mean was 14.2°, at Northboro, and the lowest monthly mean was 2.2° at Estherville. The highest temperature reported was 53°, at Thurman, on the 1st, and at Northboro, on the 24th, and the lowest temperature reported—35° at Washta on the 31st. The temperature range for the State was 88°.

Humidity. The average relative humidity for the State at 7 a. m. was 85 per cent, and at 7 p. m. it was 79 per cent. The mean for the month was 82 per cent, or about 1 per cent more than normal. The highest monthly mean was 88 per cent at Charles City, and the least was 75 at Omaha, Nebr.

Precipitation. The average precipitation for the State, as shown by the records of 102 stations, was 1.02 inches, or 0.03 inch less than the normal. By divisions the averages were as follows: Northern, 1.04 inches, or 0.20 inch more than the normal; Central, 1.10 inches, or 0.01 inch less than the normal; Southern, 0.91 inch, or 0.28 less than the normal. The greatest amount, 2.79 inches, occurred at Le Claire, and the least, 0.26 inch, at Northboro. The greatest amount an any 24 consecutive hours, 1.00 inch, occurred at Fairfield, on the 6th; and at Nora Springs on the 27th.

Snow. The average snowfall for the state was 11.2 inches, or 4.3 inches above the normal. The greatest amount, 27.8 inches, occurred at Le Claire, and the least, 3.0 inches, at Creston.

Wind. The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 46 miles an hour from the northwest, at Sioux City, on the 23rd.

Sunshine and Cloudiness. The average percentage of the possible amount of sunshine was 53, or about 3 per cent higher than the normal. The percentage of the possible amount at the several regular Weather Bureau stations was as follows: Charles City, 37; Davenport, 55; Des Moines, 57; Dubuque, 60; Keokuk, 52; Omaha, Nebr., 61; Sioux City, 50. Clear days averaged 13; partly cloudy days, 8; cloudy, 10.

Miscellaneous Phenomena. Aurora, observed at Allison and Nora Springs on 30th. Fog, 1st, 3d, 5th, 8th, 10th, 11th, 20th, 22d, 29th, 30th. Hail, 23d, 24th. Halos (lunar or solar), 1st, 4th, 9th, 11th, 12th, 15th, 17th, 18th, 22d, 25th, 29th, 30th, 31st. Haze, 2d, 3d, 4th. Meteor (brilliant), observed at Atlantic, Corning, Corydon, Des Moines, Earlham, Glenwood, Indianola, Lamoni, Mason City, Mt. Ayr, Washta and Winterset on the 22d (see article on page 9 relative thereto). Parhelia, 8th, 9th, 11th, 12th, 16th, 17th, 18th, 26th. Sleet, 1st, 2d, 5th, 23d, 24th, 26th, 30th; at scattered stations.

COMPARATIVE DATA FOR THE STATE—JANUARY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	19.7	+ 1.8	61	—27	2.03	+0.98	3.46	0.35	------	------	----	----	----
1891	26.0	+ 8.1	58	— 4	1.75	+0.70	3.99	0.61	------	4	13	7	11
1892	15.3	— 2.6	76	—38	1.09	+0.04	3.13	0.10	6.9	5	16	9	6
1893	9.3	— 8.6	54	—34	0.74	—0.31	3.20	0.13	6.9	6	11	9	11
1894	19.3	+ 1.4	69	—37	1.09	+0.04	2.24	0.31	6.0	5	14	9	8
1895	13.6	— 4.3	68	—31	0.85	—0.20	2.65	0.09	8.7	4	15	7	9
1896	23.4	+ 5.5	68	—20	0.48	—0.57	2.10	T.	2.8	3	10	10	11
1897	17.2	— 0.7	66	—30	2.01	+0.96	6.16	0.15	8.2	7	12	7	12
1898	23.4	+ 5.5	52	—11	1.60	+0.55	5.32	T.	12.6	5	15	6	10
1899	19.8	+ 1.9	68	—34	0.28	—0.77	1.15	T.	1.5	3	15	10	6
1900	25.6	+ 7.7	66	—20	0.53	—0.52	2.47	T.	2.3	3	16	7	8
1901	23.7	+ 5.8	60	—21	0.74	—0.31	2.34	0.04	6.2	4	14	9	8
1902	22.4	+ 4.5	63	—31	0.88	—0.17	2.83	0.19	9.4	4	17	8	6
1903	23.0	+ 5.1	60	—12	0.28	—0.77	1.46	T.	2.0	4	13	7	11
1904	14.0	— 3.9	57	—32	1.18	+0.13	3.68	0.02	6.1	6	12	8	11
1905	11.2	— 6.7	56	—30	0.91	—0.14	1.82	0.12	11.1	7	14	7	10
1906	24.6	+ 6.7	69	—19	1.52	+0.47	4.71	0.28	11.3	5	14	6	11
1907	18.8	+ 0.9	68	—22	1.52	+0.47	5.30	0.10	6.0	7	8	7	16
1908	24.9	+ 7.0	60	—18	0.44	—0.61	1.50	0.06	4.6	2	17	8	6
1909	21.2	+ 3.3	72	—25	1.66	+0.61	3.74	0.41	7.8	6	9	6	16
1910	18.1	+ 0.2	56	—35	1.57	+0.52	3.15	0.55	12.6	6	13	7	11
1911	20.2	+ 2.3	66	—35	0.97	—0.08	3.73	0.11	7.3	5	9	8	14
1912	4.2	—13.7	49	—47	0.53	—0.52	1.90	T.	5.5	5	14	7	10
1913	20.9	+ 3.0	62	—25	0.77	—0.28	2.05	0.04	7.2	5	14	9	8
1914	27.8	+ 9.9	64	—10	0.88	—0.17	2.34	0.27	5.1	5	11	8	12
1915	17.5	— 0.4	59	—32	1.63	+0.58	3.15	0.10	7.3	8	13	8	10
1916	17.8	— 0.1	63	—34	2.62	+1.57	6.07	0.85	7.2	10	12	6	13
1917	17.0	— 0.9	60	—28	0.83	—0.22	2.07	0.17	7.2	4	17	8	6
1918	8.6	— 9.3	53	—35	1.02	—0.03	2.79	0.26	11.2	7	13	8	10

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

BRILLIANT METEOR OF JANUARY 22, 1918.

By D. W. Morehouse, Ph. D., Drake University, Des Moines, Iowa.

On January 22, about 6 p. m. central standard time, a very brilliant meteor passed over the western portions of Iowa and Missouri. About thirty observations which seemed to contain definite and reliable information were collected in Iowa, Missouri, Kansas and Nebraska, including notes made by cooperative observers of the Weather Bureau in Iowa. It appears from these data that the meteor moved in a general direction from north to south bearing slightly toward the east; that its path was at a considerable height; and that the place of its disappearance is not far from St. Joseph, Mo. Reports from Mason City, Ia., describe the meteor as very bright and appearing a little west of south. A report from Washta bears the same statement, except that it was then seen in the south. A fragment is reported to have fallen on the farm of Rudolph Peterson, three miles north of Creston, Ia. While the description is scientifically untenable, it has some appearance of genuineness. The statement is that, "It could not be approached for over 24 hours because it was so hot. It was about the size of a bushel basket. The segment (fragment) has the appearance of pumicestone and is apparently porous. There are particles of iron in the stone."

At Lamoni, Ia., the meteor was described as falling in the northwest, followed by several heavy rolls of thunder. At Baxter, it is reported that two falling stars were seen to cross the sky. Rockwell City reports that "The glare from a meteor passing through the sky in the north Tuesday evening frightened a team of horses hitched to a hayrack, causing a runaway." The farthest north from which there is any authentic report of a noise, is Mt. Ayr, Ia. The statement written to me personally from a former student is, "It was first seen coming from the north and west of this immediate vicinity. Just before it vanished from view it seemed to be much redder and looked to be going down. In just about 10 minutes after we saw the meteor we heard a report as though a large shot gun had been discharged at a distance of about a quarter of a mile. Immediately following the report we experienced a shock that rattled our doors and windows. The people of Mt. Ayr also experienced the shock, though not the report. Our first neighbor south also heard the report and felt the shock in about 10 minutes."

From St. Joseph, Mo., the report is that "A small piece of the meteor hit the earth just east of the city limits at the home of Richard Tarwater. It struck in the yard close to the house, according to members of the family, and imbedded itself in the ground." "There was a brilliant light lasting about 30 seconds but no noise," reported Mr. Tarwater. The most southern point reporting the meteor to date, is Coffeyville, Kans., where it is described as "Giving a lurid glare and passing from the west toward the east, striking seemingly just north of town with such force that the windows in the city rattled to such an extent that the people ran out thinking an explosion had occurred." At Richmond, Mo., it was reported that "The vivid white ball of fire traveling across the northern sky appeared to burst high in the air and the fragments were consumed before they reached the earth." Fragments were also reported from Albany, Mo. The usual thin cloud of dust marking the trail of the meteor high in the sky was noted by practically every observer, but none reports any drift showing the movement of the higher air.

FEBRUARY.

February opened severely cold with the ground heavily snow-covered. Most stations reported their lowest temperatures of the winter on either the first or the 4th. Temperatures began to moderate on the 5th; the snow disappeared, except in some northern counties by the 10th; and the remainder of the month was mild, except cold waves, 16th-17th and 19th-21st, with occasional moderate snows that soon disappeared. Temperatures averaged above normal, except in Cass, Black Hawk and Clayton counties. Average daily excesses of 4° or more were reported from Buena Vista, Kossuth, Taylor and Van Buren counties.

On the 8th, a sleet storm, attended by lightning and thunder, covered a belt 100 or more miles wide, extending from southwest to northeast across the State. In portions of this belt a glaze formed, the central and southwestern portions being without snow covering. On the 14th, glaze covered Guthrie, Greene and Dallas counties and northeast nearly to the boundaries of the State, mostly without prior snow covering. The ground was snow-covered 25 or more days in the extreme north-central and northeast portions, and less than 10 days generally in the southern tier of counties and northward over Clarke, Lucas, Madison, Guthrie, Dallas and Greene counties. Snow covering was general at the close of the month.

Deficiencies of 1 inch or more in precipitation occurred in Kossuth and Fayette counties; while excesses, mostly snow, extended from the southwest to the east-central counties.

Mild weather toward the close of the month improved fuel and transportation conditions and corn began to move. Some corn remains unhusked in the fields. Winter wheat is reported as small but promising in the southeastern and uncertain in the southwestern portions of the State. Large areas that remained ungerminated because of drought last fall, are being watched with great interest.

Pressure. The mean pressure (reduced to sea level) for the State was 30.06 inches. The highest recorded was 31.07 inches, at Sioux City, on the 21st, and the lowest was 29.02 at Charles City on the 14th. The monthly range was 2.05 inches.

Temperature. The mean temperature for the State, as shown by the records of 103 stations, was 23.0°, or 2.5° higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 19.3°, or 2.2° higher than the normal; Central, 23.1°, or 2.4° higher than the normal; Southern, 26.7°, or 3.1°, higher than the normal. The highest monthly mean was 29.8° at Keokuk, and the lowest monthly mean was 15.2° at Estherville. The highest temperature reported was 70°, at Clarinda, on the 23d, and the lowest temperature reported was —36°, at Washta, on the 4th. The temperature range for the State was 106°.

Humidity. The average relative humidity for the State at 7:00 a. m. was 82 per cent, and at 7:00 p. m. it was 73 per cent. The mean for the month was 78 per cent, or about 1 per cent lower than the normal. The highest monthly mean was 84 per cent, at Charles City, and the lowest was 71 at Omaha, Nebr.

Precipitation. The average precipitation for the State, as shown by the records of 111 stations, was 0.95 inch, or 0.20 inch less than the normal. By divisions, the averages were as follows: Northern, 0.52 inch, or 0.39 inch less than the normal; Central, 1.13 inches, or 0.07 inch less than the normal; Southern, 1.20 inches, or 0.15 inch less than the normal. The greatest amount, 2.10 inches, occurred at Olin, and the least, 0.09 inch, at Algona. The greatest amount in any 24 consecutive hours, 1.22 inches, occurred at Monroe on the 8th.

Snow. The average snowfall for the State was 6.0 inches, or 1.4 inches less than the normal. The greatest amount, 14.5 inches, occurred at Glenwood, and the least, 0.5 inch at Keokuk.

Wind. The prevailing direction of the wind was from the southwest. The highest velocity reported from a regular Weather Bureau station was 51 miles an hour from the northwest at Sioux City on the 25th.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 62, or about 7 per cent more than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 49; Davenport, 63; Des Moines, 59; Dubuque, 64; Keokuk, 61; Sioux City, 73; Omaha, Nebr., 64.

Miscellaneous Phenomena. Aurora, observed at Inwood on the 10th; Allison and Nora Springs on the 12th; and Waukee on the 19th. Birds (migration of), Bedford, blue birds and ducks on the 26th; Corydon, robins on the 7th; Earlham, blue birds and ducks on the 14th. Fog, 6th, 7th, 8th, 9th, 10th, 14th, 17th, 18th, 19th. Hail, 5th, 8th, 14th, 19th. Halo (lunar or solar), 1st, 3d, 4th, 11th, 12th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22d, 23d, 24th. Haze, 18th. Parhelia, 1st, 2d, 19th, 20th. Sleet, 6th, 8th, 14th, 27th. Thunderstorms, 8th, 13th, 25th, 28th.

THE WINTER OF 1917-1918.

The mean temperature for the three winter months was 15.4°, which is 5.4° below the normal for the State, and only 0.5° warmer than the coldest of the 28 winters of record, 1892-93. The highest temperature reported was 70° at Clarinda, Page County, on February 23d. The lowest temperature reported was 40° below zero at Washta, Cherokee County, on December 29th.

The average monthly precipitation for the State was 0.84 inch, and the average total precipitation was 2.53 inches, or 0.89 inch less than the winter normal. The average total snowfall, unmelted, was 23.9 inches, or 3.4 inches more than the normal and 6.5 inches more than the average fall for the winter of 1916-17.

The total number of days with .01 inch or more of precipitation was 18, or 5 more than the average for the winter of 1916-17. The average number of clear days was 37, partly cloudy 24, cloudy 29, as compared with 46 clear, 24 partly cloudy and 20 cloudy days during the winter of 1916-17.

COMPARATIVE DATA FOR THE STATE—FEBRUARY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	26.0	+ 5.5	67	—24	0.83	—0.32	2.18	0.11	------	------	----	----	----
1891	19.4	— 1.1	70	—31	1.16	+0.01	2.41	0.55	------	3	13	7	8
1892	28.1	+ 7.6	68	—20	1.20	+0.05	2.18	0.12	5.0	6	6	7	16
1893	16.4	— 4.1	60	—28	1.39	+0.24	2.91	0.06	8.1	6	10	8	10
1894	19.7	— 0.8	60	—19	0.89	—0.26	2.41	T.	8.4	3	16	8	4
1895	16.4	— 4.1	73	—33	0.49	—0.66	1.34	0.02	3.3	4	13	9	6
1896	27.4	+ 6.9	78	—13	0.71	—0.44	2.40	0.04	5.4	4	12	9	8
1897	24.7	+ 4.2	61	—24	0.89	—0.26	1.81	0.22	8.0	5	6	10	12
1898	24.2	+ 3.7	62	—18	1.20	+0.05	3.65	0.10	7.8	5	10	9	9
1899	12.2	— 8.3	75	—40	0.89	—0.26	4.32	0.12	7.1	5	11	10	7
1900	14.8	— 5.7	60	—27	1.30	+0.15	4.57	0.18	9.9	6	10	8	10
1901	17.5	— 3.0	49	—21	1.01	—0.14	3.00	0.12	9.7	4	15	7	6
1902	17.6	— 2.9	62	—21	0.73	—0.42	2.39	0.02	2.6	4	13	8	7
1903	19.8	— 0.7	56	—21	1.18	+0.03	3.25	0.30	7.9	4	13	7	8
1904	14.8	— 5.7	70	—26	0.41	—0.74	1.99	T.	4.5	4	10	9	10
1905	12.8	— 7.7	69	—41	1.57	+0.42	2.97	0.44	15.5	7	14	6	8
1906	23.6	+ 3.1	66	—32	1.29	+0.14	2.91	0.20	6.1	5	14	7	7
1907	25.0	+ 4.5	65	—31	0.71	—0.44	1.95	0.06	4.6	4	14	6	8
1908	24.3	+ 3.8	59	—16	1.69	+0.54	3.95	0.23	8.9	6	12	6	11
1909	26.2	+ 5.7	62	—26	1.54	+0.39	4.72	0.30	7.7	5	11	6	11
1910	17.8	— 2.7	58	—21	0.46	—0.69	2.09	T.	4.0	3	14	8	6
1911	27.3	+ 6.8	71	—13	2.76	+1.61	5.46	0.50	7.0	6	12	6	10
1912	18.1	— 2.4	57	—30	1.21	+0.06	3.25	0.04	11.2	5	10	9	10
1913	20.2	— 0.3	70	—24	0.82	—0.33	2.39	0.07	7.3	4	14	7	7
1914	16.8	— 3.7	59	—29	0.87	—0.28	1.99	0.32	9.2	6	10	9	9
1915	29.1	+ 8.6	62	— 8	2.93	+1.78	5.39	0.43	9.4	9	9	5	14
1916	19.0	— 1.5	62	—32	0.55	—0.60	1.38	0.05	6.0	4	14	8	7
1917	15.2	— 5.3	68	—37	0.36	—0.79	1.19	T.	3.5	3	14	8	6
1918	23.0	+ 2.5	70	—36	0.95	—0.20	2.10	0.09	6.0	5	14	7	7

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

MARCH.

March was abnormally warm, the largest excesses in temperature, 12 degrees daily, being in Crawford County, and the smallest excesses, 7 or 8 degrees, being in the northeastern counties. Frost left the ground early in the month, not having penetrated deeply during the winter. Precipitation was in excess of the normal in the northern tier of counties, but very deficient over the southern half of the State except the extreme southeastern counties. Heavy snow fell in the northeastern part of the State on the 13th-14th. Further south along the Mississippi River this was a heavy rainstorm. Dubuque had 0.84 inch in one hour and 1.65 inches in 24 hours, being the largest amounts in the State for those periods. A glaze storm on the 9th damaged telephone and telegraph wires in the northern part of the State to the amount of $50,000.

At the close of the month the season was two weeks earlier than usual; soil dry but working up in fine condition; seeding of spring wheat and oats completed in the south and progressing rapidly in the north; and the husking of the remnant of the 1917 corn crop was practically finished. The acreage of spring wheat is remarkably large and would be larger but for the shortage of cars in which to ship seed. Fall wheat wintered well, especially in the southeastern counties, but badly needed rain; some that failed to germinate last fall, germinated in March. The mild, dry weather was especially favorable for the lamb and pig crop.

Pressure. The mean pressure (reduced to sea level) for the State was 30.03 inches. The highest recorded was 30.71 inches, at Sioux City, on the 15th; and the lowest was 29.12 inches, at Des Moines, Ia., and Omaha, Nebr., on the 9th. The monthly range was 1.59 inches.

Temperature. The mean temperature for the State, as shown by the records of 100 stations, was 42.9°, or 9.6° higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 40.0°, or 9.5° higher than the normal; Central, 43.1°, or 9.5° higher than the normal; Southern, 45.6°, or 9.7° higher than the normal. The highest monthly mean was 47.8° at Northboro and the lowest monthly mean was 36.8°, at Elkader. The highest temperature reported was 85°, at Denison, on the 19th. The lowest temperature reported was zero, at Sibley, on the 10th.

Humidity. The average relative humidity for the State at 7 a. m. was 74 per cent, and at 7 p. m. it was 51 per cent. The mean for the month was 63 per cent, or about 10 per cent lower than the normal. The highest monthly mean was 72 per cent, at Charles City, and the lowest was 55 at Omaha. Very low humidity prevailed after the 15th. On the 18th at Omaha 8 per cent at 7 p. m., at Des Moines 5 per cent at 2 and 3 p. m., and at Keokuk 14 per cent at noon are respectively the lowest ever observed at those stations.

Precipitation. The average precipitation for the State, as shown by the records of 101 stations, was 0.63 inches, or 1.14 inches less than the normal. By divisions the averages were as follows: Northern, 1.12 inches, or 0.41 inch less than the normal; Central, 0.54 inch, or 1.33 inches less than the normal; Southern, 0.23 inch, or 1.69 inches less than the normal. The greatest amount, 2.12 inches, occurred at Dubuque, and the least, a trace, at Harlan. The greatest amount in any 24 consecutive hours, 1.65 inches, occurred at Dubuque on the 13th-14th.

Snow. The average snowfall for the State was 2.6 inches, or 2.7 inches less than the normal. The greatest amount, 15.5 inches, occurred at Northwood; Burlington, Fort Madison, Lacona and Oskaloosa reported no snow, and 18 stations reported only a trace.

Wind. The prevailing direction of the wind was from the southwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 52 miles an hour from the southwest, this occurring at Keokuk on the 9th.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 73, or about 16 per cent higher than the normal. The per cent of the possible amount at the regular Weather Bureau station was as follows: Charles City, 65; Davenport, 72; Des Moines, 77; Dubuque, 76; Keokuk, 68; Sioux City, 77; Omaha, Nebr., 76.

Miscellaneous Phenomena. Aurora, 7th, 8th, 9th. See special article, page 15. Birds (migration of), Corydon, ducks on the 8th; Earlham, black birds on the 9th; Baxter, robins on the 11th; Boone, robins on the 4th; Nora Springs, wild geese and robins on the 18th, black birds on the 20th, meadow larks on the 22d; Postville, robins on the 11th, blue birds on the 12th; Des Moines, robins on the 4th, wild geese on the 14th and blue birds on the 23d. Fog, 4th, 5th, 6th, 9th, 13th, 14th, 21st, 30th. Glaze, 9th. Hail, 9th, 13th. Halo (lunar or solar), 5th, 9th, 13th, 14th, 22d, 25th, 27th, 28th, 29th. Haze, 12th, 19th, 20th, 21st, 22d. Sleet, 7th, 8th, 9th, 13th, 14th. Thunderstorms, 9th, 13th, 14th, 21st, 22d.

Rivers. The rivers and streams broke up and ran out quietly, in the southern part of the State near the close of February, in the central part about the 6th of March, and in the northern part about the 18th. The breaking up of the upper Missouri River caused stages within about 1.5 feet of flood stage at Iowa points on that river toward the close of the month.

AURORA OF MARCH 7, 1918.

One of the most spectacular displays of the aurora borealis ever observed in this State occurred on the night of March 7th. Newspapers report the display in nearly all portions of the United States and in northern Europe. At Des Moines it became noticeable about 7:20 p. m. in the form of an arch of light in the northern sky at an altitude of about 25°. This rapidly enlarged, became brighter and rose to an altiude of 60° by 8 p. m., the width of the arch being about 20° and extending from the eastern to the western horizons. About this time the flickering streamers of light known as "merry dancers" began to appear; also vivid colors, green predominating in the north and northeast and crimson in the northwest. About 9 p. m. large areas of light appeared in the south and gradually formed a continuous arch of light at an altitude of about 30°, known as the "auroral corona." At 9:30 p. m. the entire heavens were ablaze with hues and shafts of light that rapidly changed into forms of endless variety, the predominating thing being shafts of whiter light that rose from the horizon at nearly all points except a small arc in the south, and converged at a point a little, possibly 10°, southwest of the zenith. About 10:30 p. m. the display began to diminish, but some signs of it remained as late as 1:30 a. m. of the 8th. At times the light of the aurora was nearly equal to that of the full moon. Telegraph service was much troubled by the magnetic effects of the aurora.

Similar descriptions were received from observers in all portions of the State. Mr. J. H. Spencer, Meteorologist, Weather Bureau, Dubuque, Iowa, adds: "Another prominent feature was the many distinct patches or groups of light, resembling thin, whitish clouds. They were most numerous overhead and looked like cirro-stratus clouds of irregular shape. There was a decided contrast between the clear sky and the cloud-like patches. Where there were no patches the stars shone with much brilliancy, but through the cloud-like patches the stars shone only faintly."

Prof. J. L. Tilton, Simpson College, Indianola, Iowa, states that, "Overhead was what appeared to be a faint grayish cloud forming a band about half way across the sky from east to west. This band slowly drifted southward and faded away when across Orion. * * * * * If this was a cloud it seemed related to the aurora in cause. Other bands of a similar character appeared with some degree of regularity, several of them completely arching the sky from east to west, all traveling slowly, almost imperceptibly, toward the south, some not fading away till within 15 or 20 degrees above the southern horizon. These moving patches and arches were visible all through the evening, even when the white streamers met overhead. For a time three parallel bands were in sight, each requiring half to three-quarters of an hour to move from the zenith to beyond Orion."

COMPARATIVE DATA FOR THE STATE—MARCH.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	28.0	— 5.3	75	—24	1.57	—0.20	3.67	0.32	-----	---	----	----	----
1891	26.8	— 6.5	66	—19	2.60	+0.83	4.58	1.33	-----	10	6	8	17
1892	31.9	— 1.4	84	— 6	2.22	+0.45	4.58	0.57	3.9	6	11	8	12
1893	31.8	— 1.5	84	— 8	2.14	+0.37	4.40	0.64	4.0	8	9	11	11
1894	41.0	+ 7.7	84	— 5	2.03	+0.26	4.52	0.26	2.7	6	13	10	8
1895	34.4	+ 1.1	94	—11	0.83	—0.94	2.60	0.22	2.9	4	16	8	7
1896	30.9	— 2.4	81	—12	1.10	—0.67	3.99	0.16	5.4	5	12	9	10
1897	32.0	— 1.3	72	—22	2.39	+0.62	6.16	0.29	5.5	8	9	8	14
1898	37.5	+ 4.2	72	— 2	1.94	+0.17	6.21	0.33	3.7	6	12	9	10
1899	23.0	—10.3	75	—16	1.62	—0.15	5.90	0.37	8.0	6	7	12	12
1900	30.7	— 2.6	81	—13	2.06	+0.29	5.15	0.45	6.6	5	12	9	10
1901	34.2	+ 0.9	76	— 8	2.64	+0.87	5.25	0.70	12.6	7	10	8	13
1902	39.1	+ 5.8	79	—12	1.45	—0.32	4.33	0.13	1.3	7	9	11	11
1903	38.8	+ 5.5	82	6	1.38	—0.39	3.90	0.15	3.9	7	11	7	13
1904	34.8	+ 1.5	78	3	2.18	+0.41	4.57	0.50	4.4	7	8	8	15
1905	41.5	+ 8.2	84	1	2.04	+0.27	3.70	0.39	4.1	7	8	8	15
1906	27.1	— 6.2	65	—14	2.34	+0.57	4.55	0.58	8.9	10	8	7	16
1907	40.6	+ 7.3	92	— 7	1.35	—0.42	5.05	0.23	4.1	6	14	7	10
1908	37.9	+ 4.6	85	— 8	1.58	—0.19	3.74	0.45	1.1	6	13	7	11
1909	32.5	— 0.8	71	—15	1.53	—0.24	5.00	0.28	9.8	6	12	10	9
1910	48.9	+15.6	92	—10	0.17	—1.60	1.32	0.00	T.	1	23	6	2
1911	39.4	+ 6.1	83	2	0.93	—0.84	4.84	T.	1.9	5	16	9	6
1912	24.9	— 8.4	70	—19	2.01	+0.24	5.25	0.60	19.1	7	15	6	10
1913	31.9	— 1.4	78	—23	2.48	+0.71	5.88	0.74	5.3	9	11	10	10
1914	34.7	+ 1.4	78	— 5	1.69	—0.08	3.84	0.28	1.8	7	12	8	11
1915	29.3	— 4.0	61	— 5	0.96	—0.81	2.12	0.17	8.8	5	8	9	14
1916	35.2	+ 1.9	80	—18	1.57	—0.20	5.80	0.23	2.9	6	11	9	11
1917	34.6	+ 1.3	85	—12	1.84	+0.07	4.35	0.57	6.2	6	14	8	9
1918	42.9	+ 9.6	85	0	0.63	—1.14	2.12	0.03	2.6	3	19	7	5

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

APRIL.

April was colder than normal and less than 2° warmer than March. The deficiency accumulated mainly in the last 12 days, being the greatest, 7.6°, in Decatur County.

Precipitation was quite evenly distributed but generally deficient, though there was a slight excess in several of the eastern counties and in Fremont, Page and Taylor Counties. The deficiency was greatest, about 2 inches, in Madison County. A striking feature was the snowstorm of the 19th-21st, which covered the southern and eastern portions of the State, except the extreme southeast counties. In Page, Taylor, Ringgold and Decatur Counties from one to two feet of snow fell, exceeding the total fall of the winter months just preceding. Such a storm is believed to be unprecedented so late in the season, though a snowstorm of slightly less intensity occurred in south-central Iowa on April 7, 1917.

All vegetation made slow progress. Spring seeded grains depended largely on subsoil moisture till the middle of the month after which temperatures were too low, so that germination was very uneven; some that was seeded more than a month before was scarcely showing green at the end of the month over much of the State. Pears and plums were in full bloom in the southern counties near the close of the month. Field work progressed rapidly with the soil in excellent condition. Eighty-five per cent of the corn ground was made ready for the planter and a little planting was done in the south. Seed corn is generally scarce and of low vitality. Winter wheat, pastures and meadows suffered from drouth, cold and high winds.

Pressure. The mean pressure (reduced to sea level), for the State was 30.01 inches. The highest recorded was 30.78 inches, at Dubuque, on the 9th, and the lowest was 29.23 inches at Charles City, on the 29th. The monthly range was 1.55 inches.

Temperature. The mean temperature for the State, as shown by the records of 106 stations, was 44.8°, or 3.9° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 43.5°, or 3.2° lower than the normal; Central, 45.0°, or 3.9° lower than the normal; Southern 45.9°, or 4.7° lower than the normal. The highest monthly mean was 47.6°, at Northboro, and the lowest was 41.5°, at Decorah. The highest temperature reported was 79°, at Corydon and Fayette, on the 1st, and the lowest was 12° at Lake Park, on the 8th. The temperature range for the State was 67°.

Humidity. The average relative humidity for the State at 7 a. m. was 72 per cent; and at 7 p. m. it was 53 per cent. The mean for the month was 62 per cent, or about 5 per cent below the normal. The highest monthly mean was 74 per cent, at Charles City, and the lowest was 62 per cent, at Sioux City.

Precipitation. The average precipitation for the State, as shown by the records of 113 stations, was 2.32 inches, or 0.54 inch less than the normal. By divisions the averages were as follows: Northern, 1.93 inches, or 0.75 inch less than the normal; Central, 2.31 inches, or 0.55 inch less than the normal; Southern, 2.32 inches, or 0.54 inch less than the normal. The greatest amount, 4.20 inches, occurred at Olin, and the least, 1.01 inches, at Humboldt. The greatest amount in any 24 consecutive hours, 1.80 inches, occurred at Lamoni on the 21st.

Snowfall. The average snowfall for the State was 3.5 inches, or 1.7 inches more than the normal. The averages by divisions were: Northern, 1.0 inch; Central, 2.5 inches; Southern, 7.0 inches. The greatest amount, 24.0 inches, occurred at Bedford.

Wind. The prevailing direction of the wind was from the northeast. The highest velocity reported from a regular Weather Bureau station was at the rate of 59 miles an hour from the northwest at Sioux City on the 29th.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 60, or about normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 65; Davenport, 62; Des Moines, 60; Dubuque, 58; Keokuk, 56; Sioux City, 58; Omaha, Nebr., 59. Clear days averaged 12; partly cloudy 8; cloudy, 10.

Rivers. All of the rivers fell almost steadily throughout the month. The Missouri River was rather high at the beginning but became moderate to low. At the close of the month the Mississippi was unusually low for April.

Miscellaneous Phenomena. Aurora, 5th, 10th, 29th, 30th. Fog, 10th, 18th, 22d, 24th, 27th. Hail, Northern Division, 2d, 17th, 28th; Central Division, 2d, 18th, 20th; Southern Division, 2d, 3d, 17th, 19th 20th. At Belmond, moderate hail totaling 0.4 inch in depth occurred on the 17th; no damage. Halo (lunar or solar), 1st, 4th, 5th, 18th, 24th, 25th, 26th, 27th. Haze, 9th, 22d, 25th. Sleet, 2d, 3d, 17th, 18th, 19th, 20th, 21st, 23d, 28th. Thunderstorm, 2d, 3d, 6th, 12th, 13th, 15th, 16th, 17th, 18th, 20th, 21st, 24th, 25th, 27th.

COMPARATIVE DATA FOR THE STATE—APRIL.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	51.8	+3.1	88	2	1.80	—1.06	4.46	0.38	------	6	14	9	7
1891	50.6	+1.9	93	13	2.15	—0.71	5.06	0.59	------	8	14	7	9
1892	45.4	—3.3	88	14	4.75	+1.89	8.38	2.43	5.7	9	8	9	13
1893	45.5	—3.2	96	15	4.21	+1.35	8.51	1.24	6.0	10	8	9	13
1894	51.7	+3.0	93	12	3.07	+0.21	6.91	0.55	0.2	9	11	11	8
1895	54.2	+5.5	98	8	2.62	—0.24	5.88	0.28	2.1	5	14	8	8
1896	54.5	+5.8	94	10	5.02	+2.16	9.67	2.35	4.5	11	11	10	9
1897	47.9	—0.8	89	19	5.35	+2.49	9.86	2.22	T.	11	9	9	12
1898	48.1	—0.6	91	14	2.56	—0.30	4.82	0.27	T.	8	13	9	8
1899	48.9	+0.2	89	1	2.40	—0.46	5.76	0.56	2.0	7	12	11	7
1900	52.2	+3.5	89	19	2.67	—0.21	6.62	0.43	0.9	6	12	9	9
1901	49.9	+1.2	92	15	1.79	—1.07	3.47	0.66	2.0	5	14	8	8
1902	48.2	—0.5	96	9	1.71	—1.15	4.15	0.40	T.	5	14	11	5
1903	49.8	+1.1	86	17	2.98	+0.12	6.00	0.74	0.8	9	11	9	10
1904	44.1	—4.6	86	13	3.63	+0.77	8.97	1.52	1.4	7	15	6	9
1905	47.5	—1.2	90	10	3.03	+0.17	5.49	0.63	1.2	8	12	8	10
1906	52.5	+3.8	94	22	2.42	—0.44	5.55	0.53	0.6	8	14	9	7
1907	41.5	—7.2	80	10	1.32	—1.54	3.22	0.24	2.7	6	12	8	10
1908	50.5	+1.8	91	8	2.24	—0.62	4.59	0.67	0.3	8	14	8	8
1909	43.8	—4.9	86	14	4.58	+1.72	9.43	0.83	3.1	12	9	9	12
1910	52.5	+3.8	99	15	1.48	—1.38	4.86	0.10	3.0	7	14	7	9
1911	46.7	—2.0	86	3	3.09	+0.23	6.04	1.33	3.6	9	11	8	11
1912	49.9	+1.2	84	20	2.66	—0.20	5.66	0.78	1.1	8	13	8	9
1913	50.2	+1.5	88	16	3.28	+0.42	7.43	1.12	2.7	9	15	5	10
1914	48.6	—0.1	88	11	2.52	—0.34	5.03	0.37	0.3	8	10	8	12
1915	57.2	+8.5	95	18	1.41	—1.45	4.02	0.05	T.	7	15	10	5
1916	47.1	—1.6	90	11	2.6	—0.24	5.92	1.13	1.1	10	10	9	11
1917	45.5	—3.2	88	17	4.55	+1.69	7.84	2.05	3.8	11	9	7	14
1918	44.8	—3.9	79	12	2.3	—0.54	4.20	1.01	3.5	9	12	8	10

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

MAY.

May averaged warm. From freezing temperatures on the 1st the weather turned suddenly hot with maximum temperatures in the 90's in nearly all portions of the State on the 3d and 4th. High southwest winds and low humidities during this warm period, caused considerable damage to winter wheat, meadows and pastures in the western part of the State. During a cool period, 10th-13th, frost and ice were reported in many sections. Snow and sleet fell in Dallas, Polk, Madison, Warren and Marion Counties on the 13th. The remainder of the month was generally warm. After the first five days precipitation was plentiful except in the south-central and southwest districts where drouth prevailed till the 21st. Toward the close of the month the rains became heavy to excessive but the soil readily absorbed most of the water.

The hay crop will be generally short due to drouth that prevailed till the 6th; winter wheat yields will be much reduced in southwest districts. Corn planting was done under unusually favorable conditions, and in spite of the defective seed, showed a good stand where up. About five per cent of the acreage remained to be planted when the heavy rains suspended planting toward the close of the month.

Tornadoes were remarkably frequent and severe. On the 8th a small one moved northeastward across the southeast corner of Hamilton county, causing $3,500 damage. On the 9th, one moved from the southwest corner of Chickasaw county northeast into Winneshiek county. An account of this storm, by Mr. H. P. Hardin, Official in Charge, Weather Bureau Office, Charles City, Iowa, begins on page 22. On the same date, one moved from the southwest township in Muscatine county to near the center of Scott county. This storm caused $40,000 damage in Muscatine county and large damage near Eldridge in Scott county, an account of which is given by Mr. J. M. Sherrier, Official in Charge, Weather Bureau Office, Davenport, Iowa, beginning on page 26. A second tornado visited Eldridge on the 19th, causing 2 deaths, 2 injuries and $2,000 damage. The 21st was one of the worst tornado days in the history of Iowa, there being five distinct tornado paths, most of them long, on that day. See article, "The Tornadoes of May 21, 1918," beginning on page 28. On the 31st a tornado moved from the central part of Hancock county northeast to north central Worth county, causing $20,000 damage. The total number of persons killed by tornadoes during the month was 29; total injured, 182; total property damage, $2,453,780.

Pressure. The mean pressure (reduced to sea level) for the State was 29.91 inches. The highest recorded was 30.43 inches, at Dubuque, on the 23d, and the lowest was 29.09, at Des Moines, on the 9th. The monthly range was 1.34 inches.

Temperature. The mean temperature for the State, as shown by the records of 104 stations, was 64.9°, or 4.4° higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 62.8°, or 3.8° higher than the normal; Central, 65.3°, or 4.6° higher than the normal; Southern, 66.7°, or 5.0° higher than the normal. The highest monthly mean was 69.0°, at Ottumwa, and the lowest 58.9°, at Estherville. The highest temperature reported was 98° at Creston, on the 9th, and the lowest was 25° at Audubon, Earlham, Fayette and Guthrie Center, on the 1st. The temperature range for the State was 73°.

Humidity. The average relative humidity for the State at 7 a. m. was 75 per cent, and at 7 p. m. it was 57 per cent. The mean for the month, 66 per cent, is about 1 per cent above the normal. The highest monthly mean was 69 per cent, at Davenport, and the lowest was 62 per cent, at Des Moines.

Precipitation. The average precipitation for the State, as shown by the records of 113 stations, was 6.87 inches, or 2.30 inches more than the normal. By divisions the averages were as follows: Northern, 7.24 inches, or 2.76 inches more than the normal; Central, 7.26 inches, or 2.67 inches more than the normal; Southern, 6.11 inches, or 1.47 inches more than the normal. The greatest amount, 11.98 inches, occurred at Gilman, and the least, 2.72 inches, at Glenwood. The greatest amount in 24 consecutive hours, 4.81 inches, occurred at Gilman, on the 24th.

Snowfall. The average snowfall for the State was a trace, or 0.1 inch less than the normal.

Wind. The prevailing direction of the wind was from the southwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 60 miles an hour from the west, at Sioux City, on the 9th.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 66 or about 4 per cent more than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 51; Davenport, 72; Des Moines, 76; Dubuque, 67; Keokuk, 70; Sioux City, 62; Omaha, Nebr., 67.

Miscellaneous Phenomena. Aurora, 16th. Fog, 13th, 14th, 18th, 29th, 30th. Frost, 1st, 11th, 13th, 14th, 20th, 23d. Hail, Northern Division, 6th, 8th, 9th, 17th, 19th, 21st; Central Division, 8th, 9th, 17th, 18th, 19th, 20th, 21st, 22d, 25th, 26th; Southern Division, 8th, 9th, 19th, 21st, 22d, 23d, 24th, 26th, 27th, 28th. See note below. Halo (lunar or solar) 7th, 10th, 11th, 20th, 25th. Sleet, 13th. Thunderstorm, 6th, 7th, 8th, 9th, 10th, 13th, 14th, 15th, 17th, 18th, 19th, 20th, 21st, 22d, 23d, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st. Tornadoes, 8th, 9th, 19th, 21st, 31st.

Rivers. The rivers were below normal stages till about the middle of the month when the increased rainfall caused about the normal rise approaching the usual early summer maximum. Excepting slight overflows in some of the interior rivers of the eastern part of the State near the close of the month, the stages were generally moderate.

HAILSTORMS OF MAY, 1918.

M. V. Robins.

On the 6th light hail fell in Franklin County, and on the 8th and 9th a number of storms occurred, but on neither date was any serious damage reported, although in Jefferson County and southeast of Sanborn, O'Brien County, large hail fell. Hampton reported hail varying in size from one-fourth inch to one and one-fourth inches in diameter, but little harm resulted except that windows were broken and the soil packed by the stones. Grinnell reported a fall of moderate sized stones that injured tender plants and did considerable damage to greenhouses, and Mt. Pleasant a storm with but little damage. On the 9th hail fell in scattered areas along the eastern border of the state, Dubuque reporting light hail with but slight damage. In the vicinity of Davenport there was a light fall covering an area about 8 miles in width by 10 in length extending from Rock Island and Moline, Ill., northward and northeastward to Eldridge and Argo, Iowa, and while some of the stones were very large, practically no damage resulted except to fruit blossoms. Burlington, Kingston and Danville reported hail and there was a heavy fall in Lee County, but no damage was reported. Pocahontas, in the northern section, also reported a light fall but no damage except to early garden truck. On the early morning of the 10th near Fairfield some damage resulted from hail that varied in size from hickory nuts to hen's eggs. On the 21st in the southwestern and south-central districts, considerable damage was done in Adams, Taylor, Pottawattamie, Fremont and Ringgold counties. In some places in the last named, hail the size of wrens' eggs drifted to a depth of several feet beating down oats, corn and garden truck. In the other counties in this district rye and other grains were seriously damaged and in places ruined, but fruit seems to have suffered most. In the southwestern part of Pottawattamie County over a considerable area, berries, garden truck and fruit were practically ruined.

COMPARATIVE DATA FOR THE STATE—MAY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	57.7	—2.8	90	26	3.56	—1.01	6.44	1.61	------	9	10	13	8
1891	58.3	—2.2	94	21	3.18	—1.39	7.10	1.46	------	8	14	9	8
1892	54.0	—6.5	88	29	8.77	+4.20	12.64	4.87	T.	16	5	9	17
1893	56.6	—3.9	96	26	3.45	—1.12	5.82	1.65	0	9	13	9	9
1894	61.1	+0.6	96	22	1.87	—2.70	4.77	0.33	0	6	17	10	4
1895	61.7	+1.2	104	24	3.19	—1.38	5.79	0.84	0	9	11	12	8
1896	65.5	+5.0	100	34	6.69	+2.12	11.79	3.40	0	12	11	12	8
1897	58.5	—2.0	96	20	1.92	—2.65	3.59	0.21	0	5	16	10	5
1898	59.6	—0.9	92	26	4.67	+0.10	7.82	2.22	0	12	9	10	12
1899	60.2	—0.3	90	27	6.23	+1.66	11.47	3.09	0	13	9	12	10
1900	63.2	+2.7	98	22	3.31	—1.26	6.98	0.96	0	8	14	10	7
1901	60.7	+0.2	95	28	2.35	—2.22	4.57	0.72	0	7	16	9	6
1902	63.8	+3.3	97	25	5.39	+0.82	18.04	0.87	0	13	10	12	9
1903	61.6	+1.1	91	24	8.55	+3.98	15.45	2.88	0	16	9	12	13
1904	59.6	—0.9	93	27	3.78	—0.79	8.15	1.50	0	8	13	10	8
1905	58.3	—2.2	88	28	5.95	+1.38	10.83	2.57	0	14	12	11	8
1906	60.8	+0.3	95	24	3.54	—1.03	10.72	0.89	0	11	13	10	8
1907	53.5	—7.0	96	14	3.48	—1.09	7.68	0.71	1.0	10	11	10	10
1908	59.4	—1.1	93	13	8.34	+3.77	14.33	1.33	0	15	9	11	11
1909	57.9	—2.6	97	18	4.34	—0.23	7.85	1.86	0.1	9	12	12	7
1910	55.4	—5.1	89	18	3.41	—1.16	6.91	1.29	T.	10	15	7	9
1911	64.9	+4.4	98	23	3.76	—0.81	8.73	0.42	0.7	9	16	9	6
1912	62.7	+2.2	97	29	3.33	—1.24	6.41	0.72	0	10	14	11	6
1913	59.4	—1.1	102	30	6.24	+1.67	10.25	3.14	0	13	11	8	12
1914	62.2	+1.7	98	25	3.31	—1.26	6.90	0.30	T.	10	14	11	6
1915	56.1	—4.4	99	25	7.34	+2.77	13.21	3.82	T.	14	9	9	13
1916	59.9	—0.6	94	27	4.93	+0.36	10.44	2.14	T.	12	13	10	8
1917	55.1	—5.4	95	18	3.87	—0.70	7.33	1.69	0.6	10	15	8	8
1918	64.9	+4.4	98	9	6.87	+2.30	11.98	2.72	T.	13	13	11	7

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

TORNADO OF MAY 9, 1918, PEARL ROCK TO CALMAR, IOWA.

By Hal P. Hardin, Observer,.

[Dated: Weather Bureau, Charles City, Iowa, May 25, 1918.]

(75th meridian meantime used herein.)

A tornado passed east of this county, Floyd, during the afternoon of May 9, 1918. The storm had some features which have made it difficult to determine whether there was more than one tornado, or only one storm that zigzagged over a strip 2 miles wide and 54 miles long. A straight line through the middle of the zone showing wreckage runs due SW.-NE. and encounters as many buildings and groves untouched as it does objects destroyed, while the character of the wreckage at points a mile or less from such a median line leaves no doubt that a tornado had visited them.

The writer visited Pearl Rock during the afternoon of the following day, i. e., May 10. There the width of the storm's path of destruction was about 200 yards, and could be defined as such for a distance of 2 miles from southwest to northeast. There was no indication of a whirling wind outside that belt, nor for some distance at either end of it. A number of persons who went through the storm at Pearl Rock and other points have told me that they saw the funnel-shaped cloud, heard a roaring noise as that of a rapidly moving railway train, and witnessed an inward-and-upward movement of objects toward it.

Pleasant Valley. A man who observed the first known formation of the funnel cloud at Lower Pleasant Valley, the point where the storm apparently originated, described to me what he saw, as follows: The weather had been warm, with thundershowers during much of the day. Shortly before 4 p. m. two thunderstorm clouds moved rapidly from the west and the east toward each other; there was vivid lightning with loud thunder, and the heat became oppressive. There had been strong winds during the day, but with the gathering of these clouds the wind ceased until there was no surface air movement. Overhead the clouds seemed to be boiling; in each bank light and dark clouds seemed to be trying to climb over one another. The two banks met over a point about 1 mile northeast of where the observer stood. There was less lightning and thunder than before; the western cloud bank absorbed that bank which had come from the east, all light shades disappeared, and the whole mass turned blue-black in color. There was a roaring noise, and from the point where he judged the lower edges of the clouds had met a downward bulge appeared and quickly developed into the funnel. A twisting, gyral motion was seen in the funnel, and he thought that he had noticed a revolving movement in the whole bulging portion of the cloud, but was not sure of it as he had not thought to look for it at the time. As the cloud started northeastward heavy rain and light hail fell where the observer stood, followed by light rain, high wind and cooler. This man was on an elevated piece of land, and says he could plainly see the funnel for 4 miles, and that it moved straight northeastward toward Pearl Rock. All the damage in that 4-mile stretch is within a belt half a mile wide. There then follows a long reach without a visible trace of the storm; but there, as elsewhere in the storm's track, the greater part of the country is in pasture land and fields on which there are now no crops. There are no trees except along the banks of streams and around farm buildings.

Pearl Rock. Pearl Rock is a cluster of 8 or 10 farm houses at the crossroads forming the boundary lines between four counties—Butler, Floyd, Chickasaw, and Bremer; it is some 8 miles from the neighborhood known as Lower Pleasant Valley and lies northeast of the latter. The storm struck there (Pearl Rock) at 4:20 p. m., killing one woman and causing a property loss in and near the village estimated at $50,000.

Nashua. After leaving Pearl Rock there is a reach where the path of the storm is lost before it struck (4:30 p. m.) the eastern side of the town of Nashua, Chickasaw County, 3 miles northeast of Pearl Rock. I was given practically the same description of the formation of a tornado cloud before the Nashua damage began, as that given by the man at Lower Pleasant Valley. The people who witnessed the gathering of the clouds did not then know that a tornado had visited Pearl Rock and thought that one was originating over them. They had the same weather and subsequent changes as at Lower Pleasant Valley: Saw two thunder clouds meet; heard the same roaring and saw the funnel descend. Along the river bank, and at the apparent end of the storm track from Pearl Rock toward Nashua there is a heavy timber growth. The upper limbs of the trees are stripped of branches, foliage, and so much of their bark that their nakedness is noticeable as far away as the trees can be seen. None of the trees are uprooted or show damage near the ground. If the storm at Nashua was the same one that formed at Lower Pleasant Valley and later struck Pearl Rock, the funnel was receding into the cloud when it passed over those trees, and had lost its identity when the cloud approached Nashua.

In eastern Nashua and near by, one man was killed and about $100,000 worth of property, mainly farm buildings and stock, was destroyed. The time is generally placed at 4:30 p. m.

New Hampton. From Nashua the storm's track lies northeastward to New Hampton, in Chickasaw County and 18 miles from Nashua. The time it struck New Hampton is placed at 5 p. m. Between the two towns the destruction of property was great in localities, with no trace of the storm at other points within the reputed 2-mile width of its path. One woman was killed 6 miles southwest of New Hampton, one man on a farm a mile north of where the woman was killed, and a boy 1 mile south of the town. The property loss in and near New Hampton is estimated at $160,000, mostly in farm buildings and stock; the loss in the town was only a few thousand.

Calmar. From New Hampton the storm track lies northeastward to Calmar, in Winneshiek County, 25 miles from New Hampton and 54 miles from Lower Pleasant Valley. The postmaster at Calmar places the time of the storm's arrival at 5:30 p. m. Two people were killed in the town and one on a farm 1½ miles east of town. The property loss is estimated at between $200,000 and $250,000, mainly in farm buildings and stock. The path of the storm is reported as 1 mile wide and 15 miles long at Calmar. Between Calmar and New Hampton there are the same breaks in the continuity of the track and lack of evidence to sustain its reputed width, as exist between New Hampton and Nashua, and Nashua and Pearl Rock. At points between Nashua and Calmar there are communities within short distances from the reputed storm track where only black, threatening clouds were seen.

General character of weather along path.

Over the entire length of the track wherever there is trace of the storm in fallen trees, poles, and wrecked buildings the fall of objects was toward the north on the southeast side of the track and toward the south on the northwest side, except that some groves and buildings appear to have been uprooted or torn to pieces and then dropped in a confused heap. Probably the latter distributions occurred in the center of the vortex; owing to the predominance of open fields, one can not locate the exact center of the track.

All along the line reports agree that fresh winds and thundershowers occurred previous to the storm; that its approach was heralded by sharp lightning, loud thunder, tumbling light and dark clouds which changed to blue-black with pendent funnel; that a roaring noise was heard; that still air and excessive heat immediately preceded the blow which whirled around the funnel; that rain and hail accompanied the blow and light rain and falling temperature followed it. No damaging hail is reported.

If the same storm was concerned throughout, it progressed northeastward 54 miles in 1 hour and 30 minutes, a little better than ordinary automobile time. Its actual path was between 200 and 400 yards in width, but it seems to have ranged over a course 2 miles wide, in much the same way as a sailing vessel tacks over a wide course when beating to windward.

Injuries to population along route.

There were 8 lives lost, about 20 people injured, and about $500,000 worth of property destroyed. All but two of the people killed were on farms, and all but a small portion of the property loss was in farm buildings and stock.

The dead lost their lives in the following ways:

Mrs. A. C. Carpenter, Pearl Rock: Struck by flying board while in the yard, unreasoningly refusing to enter the cellar under the house as her companion wished her to do. Results proved that she would have been safe in the cellar.

Mr. Roy Husband, near Nashua: Struck on head by falling cement block while in the cellar under building which was wrecked. The cellar was filled with wreckage; there were five others in it and all were more or less injured, but none have since died.

Mrs. Alice Dowd, six miles southwest of New Hampton: Manner of death unknown. Eighty-four years old and alone in building. Body found within foundation of barn, which had been blown away, badly broken and bruised. That she was killed while within the home nearby was established through a piece of the frame of her dead son's picture which she still retained in hand. The picture had hung in the living room, and when she felt the house going she probably tried to save it.

Mr. Albert Smith, five miles southwest of New Hampton: Struck on the head by a block from the chimney when the house was demolished. Wife and child with him escaped with bruises.

Theo. Krueger, Jr., one mile south of New Hampton: Killed by falling barn in which he had just placed horses. He and his father were bringing school children home in a wagon. When they saw the storm approaching they drove into a farmyard and sent the children into the cellar under the house. They then drove the team into the barn. The father remained outside; when the storm struck him he clung to an apple tree and escaped with bruises.

Mr. and Mrs. Peter Anderson, Calmar: Killed when their house fell to pieces and the wreckage of other buildings was piled on its ruins.

That more lives were not lost is partly because the storm did not cross the crowded parts of the few towns that it touched; and partly because its slow forward movement gave people time to seek cellars and other relatively safe places after they saw it approaching. Some such reported instances in illustration, follow:

Miss Vera Deisler, teacher at the Pearl Rock school, formed her pupils in a chain of clasped hands and led them to a hedge to which they all clung with the strength of desperation until the storm passed. The school building was scattered far and wide.

At one schoolhouse, totally wrecked, it is claimed that the change in time, daylight saving, probably saved many little children from death or injury. School had been dismissed for the day long enough for the children to have reached their homes. Under normal time they would have been in the building.

At another schoolhouse they were having a picnic in celebration of the end of the term. It was filled with women and children. When the storm was seen approaching they fled to a nearby farmhouse cellar. The house over the cellar was completely blown away, but not one of the thirty occupants of the cellar was injured.

East of Nashua there is a group of Piersons, father and sons, on adjoining farms. All took to cellars, and while some of the houses went away no one was hurt. Mr. E. D. Pierson, his wife and five children went into the cellar. Before they realized that their house had been hit they were looking up into the very heart of the tornado, which was trying to lift them out of their refuge. By clinging to each other and to the wall of the cellar they managed to stay on the floor till the storm passed.

Some children alone at their home remained in the yard until they saw a neighboring place going, then took to their cellar. The house and outbuildings were wrecked, but when the parents returned they found the children safe.

But the cellar under a building is not always a safe refuge. In the above accounts, it is related that one man was killed and others injured by falling débris while in such a cellar. Some of the reported instances where the cellar was unsafe were:

Mr. Cecil Gray, near New Hampton, would not risk the cellar because it was shallow. He, his wife and child clung to some lilac bushes and escaped. The house tumbled into the cellar and the wreckage caught fire.

Mrs. McGrath, near Nashua, led her children into a plowed field where all lay in furrows with safety. Had they gone into their cellar they would probably have been killed, as the house collapsed and fell into the cellar.

Mr. Strawson, near Nashua, had a new modernly constructed home, one of the best farm buildings in this section of rich farms. Before going into the basement he took the precaution to throw water on the furnace fire to guard against that possible danger, thinking the basement otherwise safe. When the storm began tearing the house to pieces he and his family huddled together in the northwest corner. Suddenly a section of the roof dropped over them, one edge resting on the foundation wall, and at the same time the rest of the basement was filled with wreckage and their section of roof was piled high with it. But for the lucky falling of that piece of roof all would have been killed.

Evidently the safe cellar is one located far enough away from buildings to be reasonably safe from falling wreckage and having a sod roof.

Some reported tornado freaks:

Mr. Smith, fishing from a boat on the Cedar River near Nashua, was thrown from the boat. He clung to some bushes and was whipped about by the wind until his arms were nearly torn from his shoulders, but saved his life. The boat was broken up.

A family caught in a plowed field lay the storm out in furrows. There was a dog with them. As the cloud approached, the dog was seen to be desperately trying to dig himself into the ground. When the cloud was over them the suction was so great that the people had all they could do to stay in the furrows and did not see what happened to the dog. After the storm he was gone. The next day he limped into the farmyard, footsore and exhausted; much of his hair was gone and the remnant twisted or on end. Those people think that the dog was sucked up into the cloud and dropped a long way from home.

That this explanation of the dog's appearance and long absence is not improbable is evidenced by the mud deposited on buildings and other objects struck by the storm. This mud had been picked up from wet plowed land and carried along, possibly many miles. Also, along the path of the storm dead chickens were found, their bodies crushed flat and entrails protruding. It is claimed that a strong man could not throw a full-grown hen against the ground hard enough to produce that result. Apparently the storm picked them up and then threw them down with great force.

A large silo at Pearl Rock had its staves pushed in, but not broken. The roof was merely pushed partly off. The silo had a small quantity of ensilage in it. The staves were raised off the bottom boards some 10 to 18 inches. There are the usual number of rod-iron hoops on the silo. None of these broke.

The Cedar Valley Electric Co. has a power circuit of large copper wire on poles along the road through Nashua and Pearl Rock. In places the poles were torn out of the ground, the wire pulled from the poles and twisted into every possible shape, whole spans of it being compressed into two or three-foot lengths. The company estimated their loss in material to be $6,000. None of the recovered wire can be used again and much of it has not yet been located.

TORNADO OF MAY 9, 1918, AT ELDRIDGE, IOWA.

By Julius M. Sherrier, Meteorologist.

(Dated: Weather Bureau, Davenport, Iowa, May 13, 1918)

At 6:00 p. m. May 9, 1918, normal central time, when a cyclone of marked intensity was central near Dubuque, a highly destructive tornado appeared about 3½ miles southwest of Eldridge, Scott County, Iowa, and moved northeastward through the northern portion of the town, disappearing at a point about four miles to the northeastward of that place.

Frequent thundershowers had occurred at Davenport during the day, with hail from 5:10 p. m. to 5:25 p. m., but nothing unusual in the cumulonimbus cloud formations was at any time observed at the Weather Bureau office, nine miles to the southward of the tornado's track. The appearance of the pendant cloud at Eldridge has been variously described as resembling a funnel, a question mark and a column of nearly uniform diameter. Most observers agree that where it approached the ground the cloud was greatly enlarged and intensely black, resembling smoke arising from burning crude oil or asphaltum. With a progressive motion of about 50 or 60 miles per hour, the pendant cloud appeared to approach the town of Eldridge in a rather leisurely manner and was deliberately viewed by a considerable number of persons, some of whom were miles away on either side of the track. As it reached a group of buildings, the structures were suddenly hidden from view, as if by a dense smoke screen, and boards and other debris were to be seen a few moments later emerging from the lighter portions of the cloud column at great elevations above the ground. One careful observer stated that he and his grown daughter had estimated the funnel or column to be about half a mile in length. The noise of the oncoming tornado seemed to some like the roar of an enormous conflagration, and to others like an approaching express train moving at its highest speed, with an additional whistling sound like that of escaping steam.

Trees on the northern side of the storm track were found to be lying towards the southwest and south; those on the southern side towards the northeast, north and northwest, while in the middle of the path of greatest destruction there was no regular arrangement of trees and other wreckage.

The path of the tornado was about 600 feet wide and nearly eight miles long, the greatest damage occurring within a strip about 450 yards in width and about four miles in length, terminating at the northeast corner of the town of Eldridge. At a farm about three miles northeast of Eldridge the barn was unroofed and some other outbuildings were wrecked, after which the pendant cloud gradually lifted and disappeared.

Dwellings and all outbuildings on four farms to the southwest of Eldridge were totally destroyed. On two other farms the outbuildings were wrecked and the farm buildings badly damaged. Five houses and a small church within the town were blown down, while a number of other houses were damaged to a considerable extent. The money value of the buildings, household effects and farm implements destroyed in the country has been reliably estimated at $36,200, and the amount of loss in the town has been placed at $25,100. Considering the severity of the storm, the loss of live stock was remarkably light and will hardly exceed $2,000. About a dozen head of cattle, a team of horses, some hogs, and a considerable number of suckling pigs were killed or badly injured. The total amount of damage has been placed, therefore, at $63,300. No corn was up and the damage to other crops were almost negligible, with the possible exception of fruit trees which were in blossom at the time, but for which no estimate of loss can be given.

Eleven persons were injured more or less seriously, and eleven others sustained such slight injuries as cuts, sprains, bruises, nervous shock, etc. Mrs. John Priester, one of those injured died on May 14th, but all others are expected to recover.

Freakish performances were not missing in the case of the Eldridge storm. A fully grown horse, said to weigh about 1500 pounds, was picked up by the wind and carried a distance that has been reported as 250 feet, without the animal's having been injured in the least. At the farm of Mr. W. H. Wilford, a barn that had sheltered a herd of cattle was blown away leaving the terrified but unharmed animals standing on the floor or platform of the building. The cows were milked shortly after the storm had passed. Within the town, a garage was carried away and scattered over the surrounding country, while the automobile it had contained was left without a scratch upon its paint and with its windshield unbroken. A frail lattice for vines or flowers was left standing in the center of the path of greatest destruction. A pigeon is reported to have been blown against a tree with such force that its beak was driven firmly into the wood, the dead bird remaining suspended in that manner for several days.

Between five p. m. and six p. m., normal central time, hail occurred throughout an area about ten miles in length and about eight miles in width, extending from the cities of Rock Island and Moline, Ill., northward and northeastward to Eldridge and Argo, Iowa. Notwithstanding the large size of the hail stones, some of which were fully 0.8 inch in diameter, there was no serious loss reported from this cause.

TORNADOES OF MAY 21, 1918.

By Charles D. Reed, Meteorologist.

(75th meridian mean time used herein.)

Remarkable tornado activity was manifested in five distinct and widely separate paths on May 21. The locations of these paths are shown on the chart on page 37. As usual, the damage was intermittent and more or less zigzag along these paths but reports from practically every township and in many cases every section crossed, show by the time of occurrence and the description, the unmistakable progressive motion and continuous indentity of each tornado, and each one at all stages showed the characteristic funnel shape cloud, rotary winds and position of debris:

1. Tornado, Denison to Stanhope.

The earliest tornado started about 2:15 p. m. a few miles southwest of Denison, Crawford county (see storm track No. V on chart, page 37.) moving in a general east-northeasterly direction, passing north of Denison and south of West Side in Crawford county, south of Arcadia, north of Carroll and south of Lanesboro, Carroll county, between Adaza and Churdan in Greene county, entering the southwest corner of Webster county and moving almost due eastward through the south tier of townships south of Harcourt and moving into Hamilton county just north of Stanhope and disappearing north of Stratford about 4:30 p. m. The total length of the path of the storm was about 69 miles and its total duration 2 hours and 15 minutes. Its average rate of progress was about 31 miles per hour. The average width of the path of greatest destruction was 2475 feet or 165 feet less than a half mile. It was widest, 2½ miles, near Harcourt. Over the first half the path averaged about 800 feet wide and over the last half 4450 feet. There were places near the beginning and toward the end where there were occasional skips in the path of destruction, but over most of its course the destruction was complete.

In the vicinity of Denison there was one death, Emmet Eling, four injuries and property damage totaling $75,000. At West Side one person was injured and property damage about $12,000. In the vicinity of Arcadia and Carroll in Carroll county there were two deaths, Joseph Brinks and baby son, 8 persons severely injured and property damage probably exceeding $100,000. North of Glidden there were no deaths nor injuries but property damage was about $20,000.

In the northwest part of Greene county there were two deaths, Everett Roberts and J. G. Zeanor, 20 were injured and the property loss was about $75,000.

In Webster county there was one death, C. J. Anderson, 2 seriously injured and property damage $100,000. In the southwest part of Hamilton county there were no deaths or injuries and the property damage was about $10,000.

2. Tornado, Berkley to Wellsburg.

Great destruction attended another tornado on this eventful day, due to the fact that it passed through the southeast portion of the town of Boone where among other things it demolished the shops of the Chicago and Northwestern Railway. This storm originated a few miles northeast of Berkley in Marcy township, Boone county, about 3:45 p. m. It pursued a somewhat sinuous course in a general northeasterly direction. (See storm track No. VI, on chart, page 37.) In passing through Marcy and Worth township, 12 persons were injured and $21,230 worth of property lost. The storm then turned northward toward Boone, then eastward as it struck the southeast portion of the town, then northeastward again. Inside the city limits of Boone 9 people were killed and 55 injured. Those killed were:

James Bills
Charles Kilborn
Mrs. Frank (Frenchie) Roberts
Earnest Lindquist
Albert Daniels
Mrs. Albert Daniels.
Mikie Knezivik
Severed Larson
Nic Karasiles.

The property damage was conservatively placed at $500,000.

Mr. A. E. Reid of Boone, kindly furnished the following notes of his observation of the storm:

> I stood at Ninth and Story streets looking directly south on Story and first noticed a large wind cloud very low and moving rapidly east; higher up and to the north of this cloud were other apparent wind clouds moving rapidly west, and between these other clouds were describing a comparatively slow circular movement. This was the only sign I actually observed of any whirl. Being informed by a train dispatcher that a tornado was bound our way from towards Moingona. I realized for the first time what I was looking at. I then went to my office on the second floor of the Northwestern freight house and we watched the storm from the south windows as it moved northeastward. By this time the clouds were very dense and rushing apparently right on the ground and there was a continuous roar

like multiplied Niagaras until the Northwestern shops were struck, when the roar was combined with a tremendous rending and crashing and in appearance was like a fountain of debris in the air. As soon as the storm passed the shops I went to the street where a downfall of oak leaves was in progress; these had evidently been carried from the woods to the south by the storm.

My wife, who was at home on South Story street, tells me that there was continuous brilliant lightning in the cloud and tha shorly preceding and during the passage, there was an intense hot wave.

I am not positive as to the exact duration of the storm, but it seemed to me to be not over five minutes from the time I first saw the clouds to the south untli they had passed through the shops to the east.

Mr. Reid had a self-recording barometer or barograph at his residence a little less than half a mile from the storm. This showed an abrupt fall of .20 inch in a 40-minute period just before 7 a. m., then a rise of .10 inch to 10 a. m., then a gradual fall of .05 inch till 2 p. m., then an increasingly rapid fall of .15 inch in the two hours just preceding the storm, after which it rose quite steadily .25 inch by midnight.

The storm passed on northeastward through Boone county, the northwest corner of Story county, the southeast corner of Hamilton county, diagonally across Hardin county and disappeared in the northwest part of Grundy county near Wellsburg about 5:15 p. m. The total path was about 67 miles in length. Its greatest breadth was 2½ miles near Hubbard. However, eyewitnesses state that there was more than one tornado in this vicinity at the time and R. R. Swallum who was watching the storm says he saw at least five. Its average breadth was a slightly more than one-half mile. The total duration was 1 hour and 30 minutes and the average rate of progress was about 45 miles per hour.

In Des Moines township outside the city limits of Boone 2 persons were injured and the property loss was $74,000. In Jackson township one person was injured and the property loss was $2500. In the northwest part of Story county near Story City there was considerable damage but it has been impossible to obtain estimates.

In the southeast corner of Hamilton county, at Ellsworth, 2 persons were injured and the property loss was $6,000. In the vicinity of Radcliffe, Hardin county, 6 persons were injured and the property loss was $5,000. Near Hubbard the damage was $85,250 but there were no injuries nor deaths. In the vicinity of Eldora the property loss was $150,000, one person seriously injured and 9 slightly, but no deaths. Near Steamboat Rock H. J. Finster was killed, one person was injured and the property loss was about $8,000. In the northwest part of Grundy county, near Wellsburg, there were no deaths or injuries but the property loss was about $15,000. The total deaths in this storm were 10; injured, 91; damage, $897,980.

3. Tornado, Prairie City to Tama.

Starting from a few miles south of Prairie City, Jasper county about 3 p. m., a tornado dipped down at intervals along a northeasterly course diagonally across this county and headed for Tama, Tama county, but turned abruptly eastward, passed south of the town and soon disappeared. (See storm track No. VII, page 37. The chief damage was done in the town of Newton, where it amounted to $200,000. One George Reid, lost his life and one person was injured. Immediately after passing Newton the storm lifted but dipped down again in Kellogg, where the damage was $2,000, and in Hickory Grove, the northeast township in Jasper county, where the damage amounted to $100,000, but no one was killed or injured. In Tama county the damage was of a minor nature, being confined to roofs, chimneys and sheds. Part of the damage resulted from hail stones which varied from one inch to the enormous size of 6½ inches in diameter. No satisfactory estimate of the damage can be made. In this storm there was one death, one serious injury and $350,000 property damage. The storm traveled slowly, a total of only 41 miles in 2 hours.

4. Tornadoes in Clayton County.

About 6 p. m. a tornado originated near Wood and moved northeastward near Elkport, crossing the Mississippi at Guttenberg and continuing to the vicinity of Baraboo, Wis., a total distance of about 100 miles in 2 hours, or an average of 50 miles per hour. The damage in Iowa was about $30,000. Eight persons were injured; none killed. Rumors have been received that the early stages of this storm appeared in the northwest part of Linn county near Walker, but confirmation is lacking. About 7 to 7:30 p. m. another tornado moved in a path parallel with the first, passing about 2 miles northwest of Elkport and about a mile into the south central part of Garnavillo township. The path was about 10 miles long and the total damage was about $3,000. (See storm tracks Nos. VIII and IX, page 37.)

Mr. J. H. Spencer, Official in Charge Weather Bureeau Office, Dubuque, Iowa, obtained the following interesting description of the storm from Mr. W. H. Landschultz of Dubuque:

> I happened to be at Elkport during the late afternoon and night of May 21st. At 5 p. m. the atmosphere was hot and close. It was so bad, in fact, that I thought something was going to happen, and remarked to a fellow traveler, "This feels like tornado weather." At about 6 p. m. the alarm was given that a tornado was approaching. I rushed out of the hotel, and off to the southwest a roaring, whirling funnel cloud was plainly visible, moving northeast. It was a terrible and awe-inspiring sight. The funnel cloud was of inky blackness and extended downward to the ground, but would occasionally rise. As it passed by it was about one and one-half miles away at the nearest point. The air where we stood was entirely calm, but the clouds between us and the funnel cloud were rushing pell-mell toward the funnel.
>
> Little or no rain fell in advance of the tornado, and remarkable to state, I saw the funnel cloud for 15 to 20 minutes before it was finally obscured by the heavy rain that followed it. We saw an object within the funnel cloud that looked like the roof of a house or barn. It remained in the air but was carried up and down.
>
> The weather did not cool off after the tornado to the southward passed by. It remained hot and close and at about 7:30 p. m. another tornado passed about two miles north of Elkport. We did not see its funnel cloud.
>
> On the 22d I crossed the path of the first tornado and witnessed the desruction it had wrought. Trees two to three feet in diameter were torn up b ythe roots and carried a long distance. The trunks of other reees were still standing, but completely stripped of branches and bark. Farm buildings were destroyed. Woven wire fences were moved bodily for many yards. A steel binder was picked up from a field and dashed to pieces in

the road along which we passed. Some farm animals were killed. A few people were injured but no one killed in this immediate vicinity. As I passed along the road I could see the path of the storm for miles each way, so great had been the destruction. The path was about half a mile wide at the widest points, but not nearly so wide at the points of greatest destruction.

The newspaper accounts of the tornadoes of May 21st were in no wise exaggerated. After having witnessed one at close quarters I am convinced that no meteorological phenomenon is so terrifying and of such destructive force. Fortunately they are not of common occurrence.

The Postmaster at Guttenberg, Iowa, reports the arrival of the storm there at 6:30 p. m.

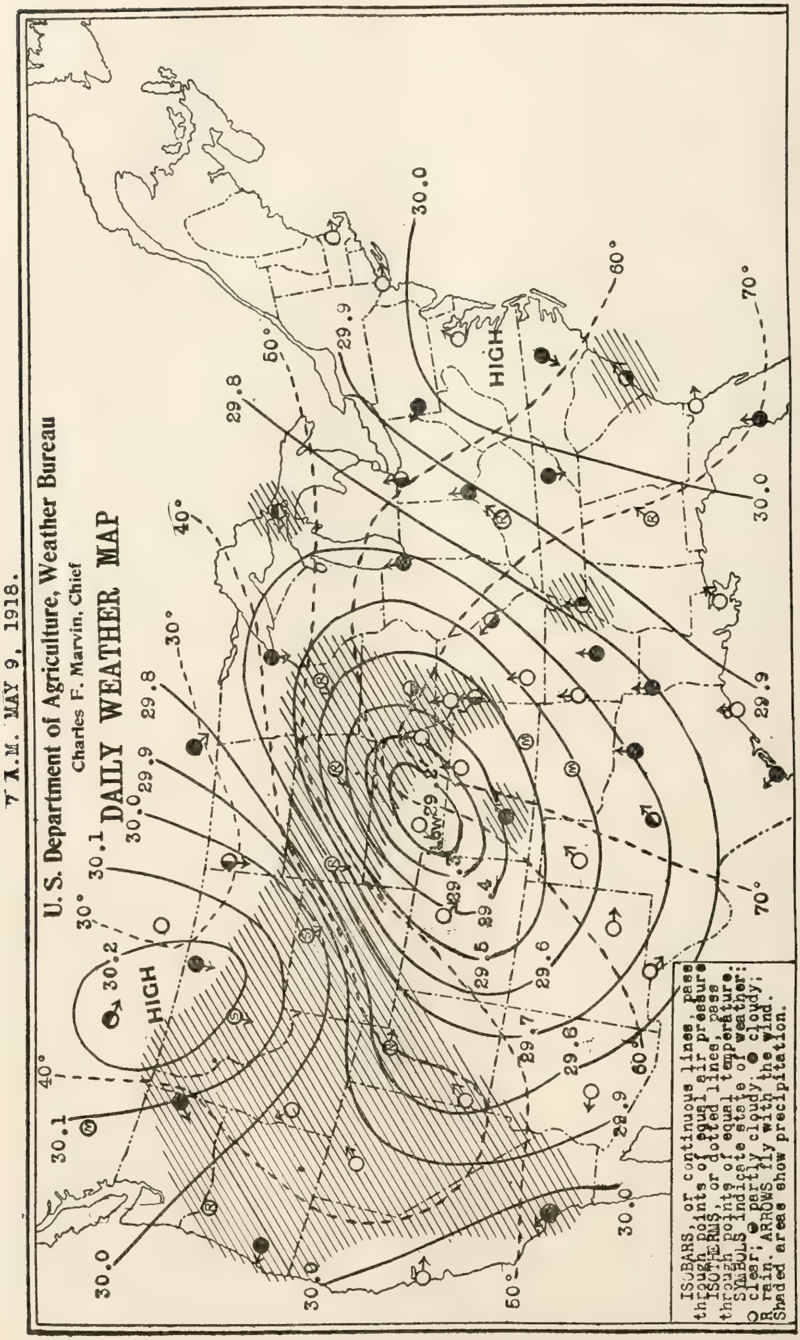
A funnel cloud seemed to travel slowly from southeast to northwest and was attended by a heavy rumbling noise. Color was dark slate. Lightning all around. Only a little rain occurred before the storm struck—heavy after. Hail did not amount to much. Storm was a whirl and it threw wreckage 150 feet up along the hillside. Path in Guttenberg was about two city blocks wide and about eight city blocks long, then it crossed the Mississippi into Wisconsin. No one was killed but three were injured. Houses were unroofed, barns and other buildings were wrecked and some were blown across the river into Wisconsin. Estimated property loss about $20,000.

Later: Reports from Walker, in the northwest part of Linn county, show that about 6:45 p. m. May 21, a tornado moved east-northeast through that town, causing the death of Mrs. Wm. Ossman, the serious injury of two others, and property damage amounting to $52,000. Some reporters place the damage considerably higher.

Weather Conditions Favorable for Tornadoes.

Attention is invited to a copy of the daily weather map of the United States Weather Bureau on page 34 showing the general weather conditions prevailing at 7 A. M. May 9, 1918. An area of low barometer or general storm center was located in central Nebraska, the lowest barometer reading being 29.18 inches at North Platte. The barometric gradient or slope was steep from the Mississippi River across Iowa to eastern Nebraska, amounting to .40 inch in 500 miles. As usual in such cases, warm, southern, moisture laden air was being transported northward over Iowa in tremendous volumes. Intervals of sunshine warmed the air rapidly at the surface. From around 60 degrees in the morning the temperature rose about 30 degrees by early afternoon, which set up strong by the proximity of the general storm center. Towering cumulo-nimbus convectional (up and down) currents, the up-currents being greatly aided clouds here and there over the State raised their heads and in some cases a large part of their bodies into the rapidly moving, wintry, westerly winds aloft that had not had time to be warmed by the springtime sunshine caught and radiated by the ground. Where these conditions were most pronounced tornado vortices formed. By 7 p. m. of the 9th the general storm center was crossing the Mississippi River at almost the identical time and place that the tornadoes occurred in Clayton county. By the next morning the general storm center had moved to a point in Canada northeast of Lake Huron and the danger of further tornadoes was over till a similar set of conditions could be pieced together in the meteorological kaleidoscope.

In this case there was not long to wait, for May 21 was one of the worst tornado days in the history of Iowa. The weather map of 7 a. m. that date on page 35 shows a general storm center with a barometer reading of 29.62 inch at Valentine, Neb. The barometric gradient or slope across Iowa from the Mississippi River to extreme eastern Nebraska was .50 inch in 400 miles, showing considerable more energy than the map of May 9. Much the same temperature, moisture, wind and cloud conditions prevailed, only that, if anything, the summits of the cumulo-nimbus clouds rose higher. The great cloud mountains in which the Boone and Newton tornadoes were generated were plainly visible at Des Moines. In this case the general storm center took a wide detour. At 7 p. m. it was near the northwest corner of Minnesota and by the next morning it was north of Lake Superior.



7 A.M. MAY 9, 1918.

U. S. Department of Agriculture, Weather Bureau

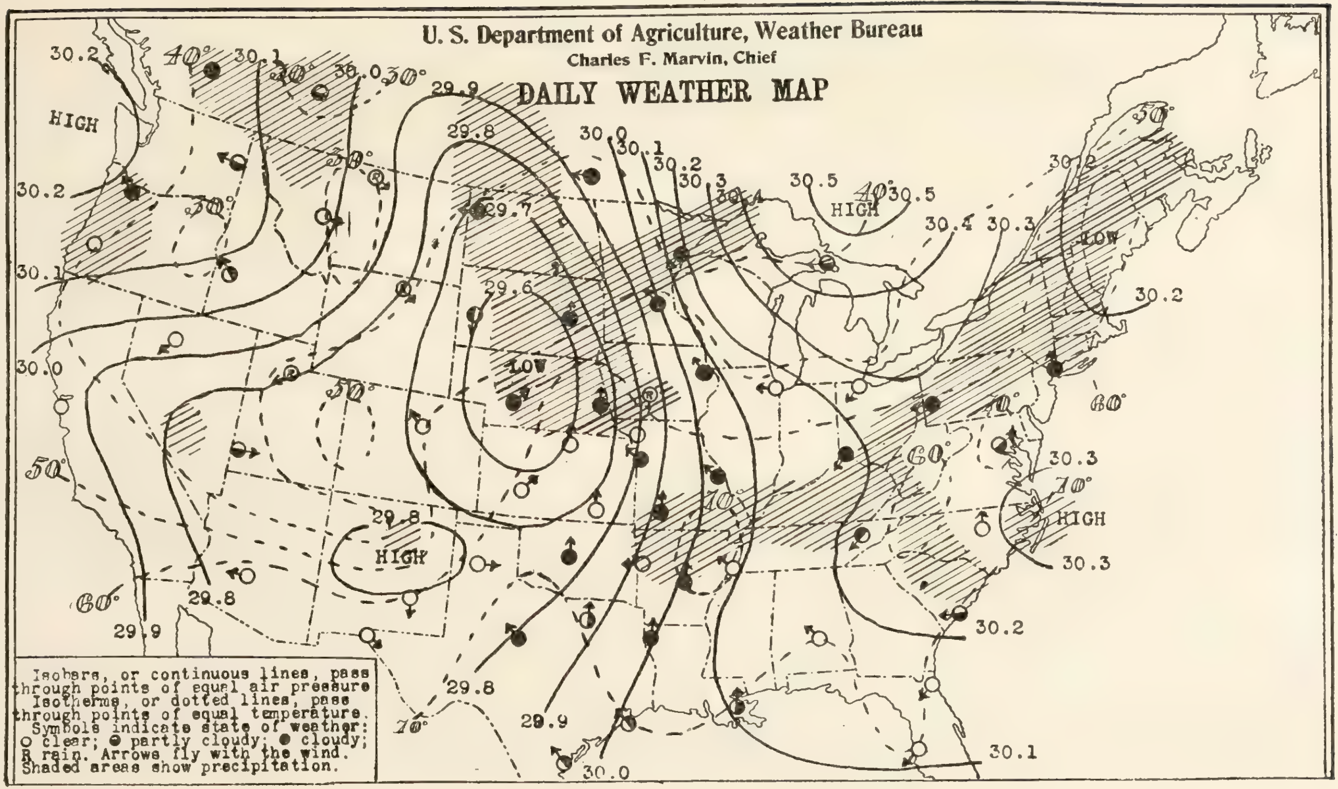
Charles F. Marvin, Chief

DAILY WEATHER MAP

ISOBARS, or continuous lines, pass through points of equal air pressure. ISOTHERMS, or dotted lines, pass through points of equal temperature. SYMBOLS indicate state of weather: ○ clear; ◐ partly cloudy; ● cloudy; R rain. ARROWS fly with the wind. Shaded areas show precipitation.

HIGH
30.2
HIGH
LOW
29.2
29.3
29.4
29.5
29.6
29.7
29.8
29.9
30.0
30.1
30°
40°
50°
60°
70°

7 A.M. MAY 21, 1918.



U. S. Department of Agriculture, Weather Bureau

Charles F. Marvin, Chief

DAILY WEATHER MAP

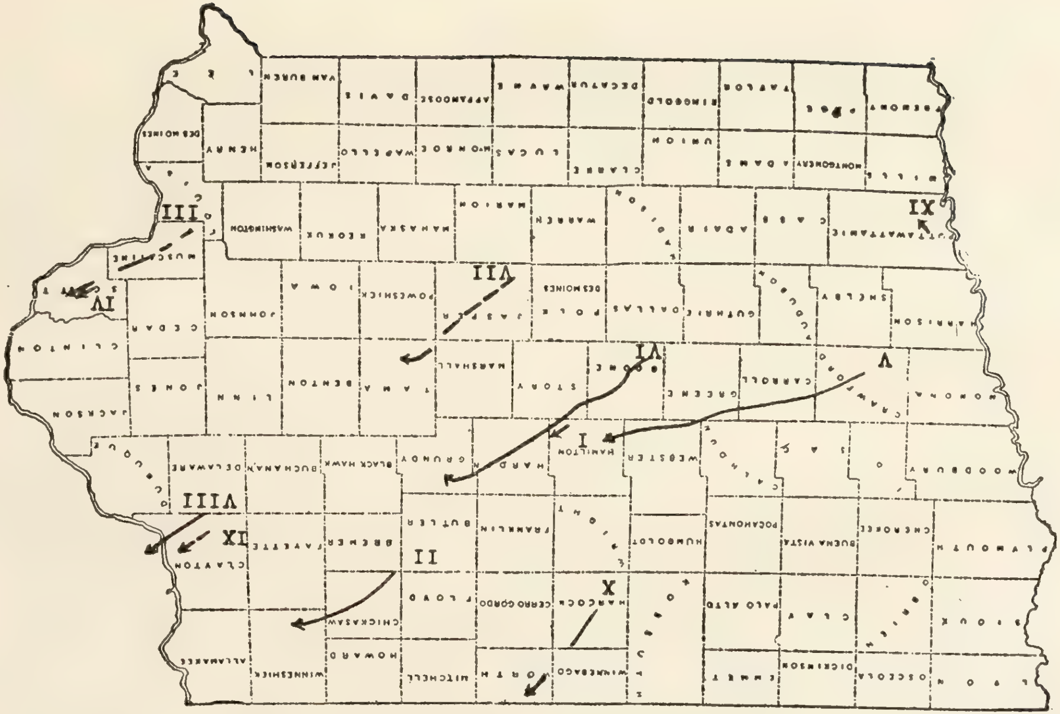
HIGH
LOW
LOW
HIGH
HIGH
HIGH
30.2
30.1
30.0
29.9
29.8
29.7
29.6
30.3
30.4
30.5
40°
30°
50°
60°
70°

Isobars, or continuous lines, pass through points of equal air pressure. Isotherms, or dotted lines, pass through points of equal temperature. Symbols indicate state of weather: ○ clear; ◐ partly cloudy; ● cloudy; R rain. Arrows fly with the wind. Shaded areas show precipitation.

TORNADOES IN IOWA DURING THE YEAR, 1918.

Storm No.*	Nearest Towns	Date	Hours	Storm Moved From	Length of path, miles	Persons killed	Persons injured	Estimated damage
I	Randall to Ellsworth	May 8	3.30 p.	S. W. to N. E.	4	0	0	$ 3,500
II	Pearl Rock to Calmar	May 9	4—5.30 p.	S. W. to N. E.	54	8	20	500,000
III	Conesville to Eldridge	May 9	6.10 p. to 7 p.	S. W. to N. E.	42	1	22	103,300
IV	Eldridge	May 19	6 p.	S. W. to N. E.*	½	2	2	2,000
V	Denison to Stanhope	May 21	2.15 p. to 4.30 p.	W.—S. W. to E.—N. E.	69	6	35	492,000
VI	Berkley to Wellsburg	May 21	3.45 p. to 3.15 p.	S. W. to N. E.	67	10	91	897,980
VII	Prairie City to Tama	May 21	3—5 p.	S. W. to N. E.	41	1	1	350,000
VIII	Wood, Iowa, to Baraboo, Wis.	May 21	6—8 p.	S. W. to N. E.	*12	*0	*8	*30,000
IX	Elkport to Garnavillo	May 21	7 p.	S. W. to N. E.	10	0	0	3,000
	Walker	May 21	6.45 p.	W.—S. W. to E.—N. E.	3	1	2	52,000
X	Britt to Silver Lake	May 31	2—4 p.	S. W. to N. E.	32	0	2	20,000
XI	Weston	July 14	9.30 p.	N. W. to S. E.	½	0	0	600
				Totals	335	29	182	$2,454,380

*Roman numerals refer to storm track on accompanying chart. †In Iowa, only.


I
II
III
IV
V
VI
VII
VIII
IX
X
XI
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
BENTON
LINN
JONES
JACKSON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
DES MOINES
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
CLINTON
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

TORNADO PATHS IN IOWA DURING THE YEAR, 1918.
(Numerals Refer to Descriptive Data in Accompanying Table.)

JUNE

Temperatures averaged about 5 degrees in excess of the normal in the southwestern and about 1 degree below normal in the northeastern counties. The period 10th-16th was notably warm. On the 16th, many stations reported temperatures of 100 degrees or higher and broke their June records. During the period, 2d-5th, excessive rains occurred from Webster and Hamilton, southeast to Poweshiek and Johnson counties, causing unusual overflows in the watersheds involved. Precipitation was very deficient in several southwestern counties. A severe hailstorm occurred in portions of Polk, Marion and Mahaska counties on the 27th.

Crops made excellent progress, except oats which were prematurely ripened by the hot weather in the southwestern portion of the State; early potatoes also were injured. Corn was far advanced and some laid by at the close of the month. Rye harvest began in the southern counties about the 25th, and oats toward the close of the month.

Pressure. The mean pressure (reduced to sea level) for the State was 29.93 inches. The highest recorded was 30.33 inches, at Sioux City, on the 7th, and the lowest was 29.56 at Sioux City on the 1st. The monthly range was 0.77 inch.

Temperature. The mean temperature for the State, as shown by the records of stations, was 70.8°, or 1.7° higher than normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 68.7°, or 1.1° higher than the normal; Central 70.6°, or 1.3° higher than the normal; Southern, 73.1°, or 2.8° higher than the normal. The highest monthly mean was 76.4°, at Thurman, in the extreme southwestern part of the State, and the lowest was 65.7° at Postville, in the extreme northeast. The highest temperature reported was 105° at Omaha, Nebr., on the 16th and the lowest was 38°, at West Bend, on the 2d. The temperature range for the State was 67°.

Humidity. The average relative humidity for the State at 7 a. m. was 77 per cent, and at 7 p. m. it was 60 per cent. The mean for the month was 69 per cent, or normal. The highest monthly mean was 74 per cent, at Charles City, and the lowest was 66 per cent, at Sioux City.

Precipitation. The average precipitation for the State, as shown by the records of 111 stations, was 5.29 inches, or 0.91 inch more than the normal. By divisions the averages were as follows: Northern, 4.89 inches, or 0.46 of an inch more than the normal; Central, 6.49 inches or 2.17 inches more than the normal; Southern, 4.50 inches, or 0.11 of an inch more than the normal. The greatest amount, 10.19 inches, occurred at Monroe, and the least, 1.55 inches at Audubon. The greatest amount in 24 consecutive hours, 5.37 inches, occurred at Monroe, on the 24th.

Wind. The prevailing direction of the wind was from the southeast. The highest velocity reported from a regular Weather Bureau station was 45 miles an hour, from the northeast, at Sioux City, on the 24th.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 69, or about 1 per cent more than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 57; Davenport, 67; Des Moines, 76; Dubuque, 64; Keokuk, 67; Sioux City, 74; Omaha, Neb., 80.

Miscellaneous Phenomena. Aurora, 9th, 11th. Fog, dense, 4th, 6th, 25th, 26th, 28th. Hail, Northern Division, 3d, 6th, 14th, 20th, 27th, 30th; Central Division, 3d, 5th, 27th; Southern Division, 1st, 2d, 3d, 4th, 5th, 24th, 27th, 28th. The hailstorms of June will be more fully covered in our report for July. Halos (solar), 1st, 2d, 7th, 9th, 11th, 22d. Thunderstorms, all days except 7th, 8th, 11th, 12th, 15th, 21st, 22d, 23d. Rainbow, 5th, 29th.

Rivers. Moderate stages prevailed in the Missouri River but the flood stage was not reached, nor was the flood stage reached on the Mississippi except near Keokuk, where flood conditions prevailed from the 10th to the 14th, inclusive, due to the heavy discharge of the Skunk, Iowa and Des Moines Rivers; above Burlington moderate stages prevailed but a great deal of bottom land was flooded and some crops destroyed. In the interior of the State rivers and small streams were overflowed for a considerable period due to an unusually heavy fall of rain on the 3d and 4th, in the central counties. At Boone the Des Moines River reached a stage of 23.2 feet on the 5th, which is within 2.2 feet of the highest of record and 6.2 feet above the flood stage. The principal damage was to crops and bridges but there was some damage to other property, and train movements for a time were demoralized.

COMPARATIVE DATA FOR THE STATE—JUNE.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With prc. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	72.7	+ 3.6	106	44	7.76	+3.38	16.53	1.57	------	11	12	10	8
1891	69.1	0.0	99	37	5.39	+1.01	19.88	1.68	------	11	8	10	12
1892	69.2	+ 0.1	102	42	5.19	+0.81	14.16	0.67	------	10	12	11	7
1893	71.2	+ 2.1	100	40	3.91	—0.47	7.56	1.36	------	8	15	11	4
1894	73.2	+ 4.1	104	34	2.67	—1.71	6.20	0.57	------	7	16	10	4
1895	69.7	+ 0.6	102	34	4.32	—0.06	9.26	0.98	------	10	11	11	8
1896	69.1	0.0	100	40	3.11	—1.27	7.89	0.81	------	9	12	13	5
1897	69.1	0.0	103	29	3.81	—0.57	9.38	1.03	------	10	10	12	8
1898	71.4	+ 2.3	99	42	4.72	+0.34	12.48	1.90	------	9	13	10	7
1899	70.7	+ 1.6	100	42	5.04	+0.66	11.99	1.10	------	10	12	13	5
1900	69.7	+ 0.6	102	38	3.98	—0.40	12.35	0.67	------	5	17	10	3
1901	72.3	+ 3.2	106	30	3.71	—0.67	7.84	1.05	------	9	15	11	4
1902	65.2	— 3.9	97	32	7.16	+2.78	16.04	1.46	------	14	8	11	11
1903	64.6	— 4.5	96	30	2.86	—1.52	6.04	0.75	------	10	13	10	7
1904	67.1	— 2.0	94	35	3.45	—0.93	8.35	0.44	------	7	13	10	7
1905	69.9	+ 0.8	100	36	5.53	+1.15	14.89	1.80	------	10	12	11	7
1906	67.9	— 1.2	99	37	3.92	—0.46	8.27	1.48	------	8	15	10	5
1907	66.5	— 2.6	98	36	5.35	+0.97	9.33	2.07	------	11	14	9	7
1908	67.1	— 2.0	94	35	5.66	+1.28	11.88	1.77	------	13	12	10	8
1909	69.1	0.0	96	40	6.41	+2.03	13.30	2.80	------	13	12	10	8
1910	69.5	+ 0.4	105	33	1.99	—2.39	5.51	0.05	------	7	18	7	5
1911	75.7	+ 6.6	108	36	1.82	—2.56	6.28	0.06	------	5	20	8	2
1912	66.2	— 2.9	101	34	2.74	—1.64	5.71	0.78	------	7	15	9	6
1913	71.5	+ 2.4	102	33	3.31	—1.07	8.95	0.74	------	7	19	8	3
1914	72.2	+ 3.1	101	40	5.57	+1.19	13.24	1.17	------	13	12	14	4
1915	65.1	— 4.0	91	31	4.16	—0.22	9.99	1.72	------	11	12	12	6
1916	64.5	— 4.6	96	38	3.71	—0.67	7.96	1.41	------	10	13	11	6
1917	66.0	— 3.1	100	32	6.65	+2.27	13.82	3.04	------	12	13	10	7
1918	70.8	+ 1.7	104	38	5.29	+0.91	10.19	1.55	------	11	16	10	4

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

JULY.

Temperatures averaged slightly below normal in all but the southwest counties where there was a slight excess, the largest excess being 3.6 degrees at Corning. Comparatively cool weather prevailed on the 1st, 6th-13th and 29th-31st. The warmest period over most of the State was the 24th-28th, though many stations in the north reported their highest temperatures about the 20th. Three general rain periods, 4th-7th, 14th-15th and 22d-26th resulted in deficient totals, except in the north two tiers of counties and from Marshall southeast to Muscatine and Scott counties. In the central counties of the southern tier, the deficiency approached 4 inches. Excessive rains occurred in the north-eastern counties on the 25th-26th, which, together with high winds, beat down the corn and oats badly and delayed harvest. Otherwise harvest progressed rapidly, with unusually good conditions for labor and curing of the shocked grain. Threshing was well under way in the south half of the State the last of the month. Yields and quality of small grains were generally good.

On July 14, about 9:30 p. m. a small tornado moved from a mile and a half northwest of Weston, Pottawattamie county, to a half mile west of that town, causing $600 worth of damage.

Pressure. The mean pressure (reduced to sea level) for the State was 30.02 inches. The highest pressure recorded was 30.31 inches, at Dubuque on the 12th, and the lowest was 29.65 at Sioux City on the 3d. The monthly range was 0.66 of an inch.

Temperature. The mean temperature for the State, as shown by the records of 100 stations, was 73.1°, or 1.0° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 71.2° or 1.5° lower than the normal; Central, 73.0° or 1.3° lower than the normal; Southern, 75.0°, or 0.2° lower than the normal. The highest monthly mean was 78.0° at Corning, and the lowest was 68.6°, at Postville. The highest temperature reported was 105°, at Clarinda, on the 28th; the lowest was 40°, at Audubon, on the 1st. The temperature range for the State was 65°.

Humidity. The average relative humidity for the State at 7 a. m. was 77 per cent, and at 7 p. m. it was 56 per cent. The mean for the State was 66 per cent, or 1 per cent lower than the normal. The highest monthly mean was 74 per cent, at Sioux City, and the lowest was 58 per cent at Omaha, Nebr.

Precipitation. The average precipitation for the State, as shown by the records of 108 stations, was 3.17 inches, or 0.79 inch less than the normal. By divisions the averages were as follows: Northern, 4.57 inches, or 0.69 inch more than the normal; Central, 3.00 inches, or 0.96 inch less than the normal; Southern, 1.93 inches, or 2.09 inches less than the normal. The greatest amount, 8.05 inches, occurred at Postville, and the least 0.26 of an inch at Albia. The greatest amount in 24 consecutive hours, 3.62 inches, occurred at Charles City on the 25th and 26th.

Wind. The prevailing direction of the wind was from the southeast. The highest velocity reported from a regular Weather Bureau station was 41 miles an hour, from the south, at Sioux City, on the 3d.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 72, or 2 per cent less than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 65; Davenport, 73; Des Moines, 78; Dubuque, 74; Keokuk, 80; Sioux City, 64; Omaha, Nebr., 71.

Miscellaneous Phenomena. Aurora, 10th. Fog, 5th, 6th, 15th, 16th, 17th, 25th. Hail, Northern Division, 22d, 25th, 26th; Southern Division, 27th, 28th. Halo (lunar 22d; solar 1st, 14th, 16th, 17th, 27th). Rainbow (lunar), at Grinnell on the 25th. Thunderstorms, 2d, 3d, 4th, 5th, 6th, 7th, 9th, 14th, 15th, 19th, 21st, 22d, 23d, 24th, 25th, 26th, 27th, 28th, 29th, 31st. Tornado, 14th.

Rivers. The principal rivers fell steadily during the month except when affected temporarily by heavy rainfall. Moderate stages for July prevailed on the Missouri and low stages on the Mississippi. None of the streams in the interior of the State were overflowed and low stages prevailed generally.

COMPARATIVE DATA FOR THE STATE—JULY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	75.6	+ 1.5	110	45	1.98	—1.98	5.00	0.37	------	3	18	8	5
1891	68.5	— 5.6	99	41	4.22	+0.26	8.20	1.67	------	8	13	13	5
1892	73.0	— 1.1	104	38	5.29	+1.33	12.86	1.71	------	9	16	10	5
1893	75.0	+ 0.9	102	47	3.33	—0.63	8.84	1.49	------	7	19	10	2
1894	76.4	+ 2.3	109	39	0.63	—3.33	3.50	T.	------	3	22	8	1
1895	72.1	— 2.0	104	35	3.40	—0.56	10.10	0.45	------	7	15	12	4
1896	73.6	— 0.5	104	42	6.90	+2.94	12.67	1.61	------	9	14	11	6
1897	75.6	+ 1.5	100	42	3.26	—0.70	7.60	1.01	------	6	18	10	3
1898	73.4	— 0.7	102	42	2.98	—0.98	12.88	0.55	------	7	19	9	3
1899	73.1	— 1.0	101	38	3.07	—0.89	8.66	0.42	------	7	16	10	5
1900	73.4	— 0.7	102	37	6.15	+2.19	18.45	1.80	------	9	16	10	5
1901	82.4	+ 8.3	113	46	2.34	—1.62	5.97	0.27	------	5	21	9	1
1902	73.1	— 1.0	99	41	8.67	+4.71	13.57	4.82	------	13	14	10	7
1903	72.9	— 1.2	100	40	4.83	+0.87	12.72	0.94	------	9	17	9	5
1904	70.6	— 3.5	100	38	4.41	+0.45	11.97	1.28	------	10	16	9	6
1905	70.6	— 3.5	102	40	2.91	—1.05	7.08	0.69	------	9	14	10	7
1906	70.9	— 3.2	102	42	3.04	—0.92	7.05	0.26	------	8	18	10	3
1907	73.7	— 0.4	102	41	7.27	+3.31	13.66	3.97	------	13	16	11	4
1908	73.0	— 1.1	100	42	3.66	—0.30	9.21	0.70	------	8	16	10	5
1909	72.3	— 1.8	102	46	4.77	+0.81	12.20	1.29	------	10	15	8	8
1910	74.5	+ 0.4	108	43	1.86	—2.10	5.69	0.12	------	7	19	8	4
1911	75.5	+ 1.4	111	38	2.27	—1.69	6.62	0.08	------	7	18	10	3
1912	74.6	+ 0.5	103	38	3.71	—0.25	7.56	1.17	------	10	17	10	4
1913	76.1	+ 2.0	108	45	1.82	—2.14	6.23	T.	------	5	21	8	2
1914	76.6	+ 2.5	109	43	2.27	—1.69	6.50	0.44	------	5	20	8	3
1915	69.5	— 4.6	92	40	8.32	+4.36	15.83	3.68	------	14	10	12	9
1916	79.7	+ 5.6	105	48	1.78	—2.18	6.87	0.10	------	5	23	7	1
1917	74.3	+ 0.2	106	38	2.27	—1.69	6.06	0.23	------	7	21	8	2
1918	73.1	— 1.0	105	40	3.17	—0.79	8.05	0.26	------	8	19	8	4

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

AUGUST.

On August 4th-5th high temperature records, covering periods of 40 to 46 years at some stations, were broken. The highest reported was 113° at Clarinda, Knoxville and Shenandoah on the 4th, which equals the absolute maximum for the State that occurred at Sigourney on July 22, 1901. The monthly mean for the State, 76.0°, though 4.2° above normal, was exceeded in August, 1900, 1909 and 1913. The excess in temperature was greatest, 8.0°, in Adams county where the greatest damage to corn occurred. Precipitation was deficient from the Missouri River eastward over the central counties extending in a narrow belt to the middle Mississippi. The deficiency exceeded 3 inches in Monona, Fremont and Webster Counties; and in the extreme southwest counties from March 1 to August 31 is more than 50% of the normal.

The corn crop had been somewhat injured by drouth prior to August in the southwest one-third of the State and was in poor condition to withstand the withering heat, strong southerly winds and low humidity which were at a climax August 4-6 and were somewhat damaging in localities till general showers came about the middle of the month. As a whole, the crop deteriorated 11 per cent or about 35,000,000 bushels. In Adams County where the worst damage is reported, the crop will be only 20 per cent of the normal. Much livestock was sold in the southwest counties because of shortage of feed and that which remained was on winter feed throughout the month. Excessive rains with unusually severe electrical storms in the north and east-central counties on the 16th-17th damaged shocked grain and delayed threshing.

Pressure. The mean pressure (reduced to sea level) for the State was 29.93 inches. The highest recorded was 30.30 inches, at Dubuque, on the 19th, and the lowest was 29.58 inches, at Sioux City, on the 5th. The monthly range was 0.72 of an inch.

Temperature. The mean temperature for the State, as shown by the records of 102 stations, was 76.0°, or 4.2° higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 72.8°, or 2.4 higher than the normal; Central, 76.1°, or 4.4° higher than the normal; Southern, 79.1°, or 5.9° higher than the normal. The highest monthly mean was 80.8°, at Clarinda, Keokuk, Thurman and Omaha, Nebr., and the lowest was 70.0°, at Forest City. The highest temperature recorded was 113°, at Clarinda, Knoxville and Shenandoah, on the 4th, and the lowest was 38°, at Sibley, on the 30th. The temperature range for the State was 75°.

Precipitation. The average precipitation for the State, as shown by the normal. By divisions the averages were as follows: Northern, 4.32 records of 112 stations, was 3.61 inches, 0.07 of an inch less than the inches, or 0.84 of an inch more than the normal; Central, 2.97 inches, or 0.80 of an inch less than the normal; Southern, 3.55 inches, or 0.23 of an inch less than the normal. The greatest amount 8.38 inches, occurred at Centerville, and the least, 0.54 of an inch, at Thurman. The greatest amount in 24 hours 5.22 inches, occurred at Dubuque on the 16th-17th.

Humidity. The average relative humidity for the State at 7 a. m. was 77 per cent, and at 7 p. m. it was 58 per cent. The mean for the month was 67 per cent, or 4 per cent lower than the normal. The highest monthly mean was 76 per cent, at Charles City, and the lowest was 56 per cent, at Omaha, Nebr.

Wind. The prevailing direction of the wind was from the southwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 51 miles an hour, from the south, at Sioux City, on the 15th.

Sunshine. The average per cent of the possible amount of sunshine was 68, or 3 per cent less than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 63; Davenport, 69; Des Moines, 62; Dubuque, 66; Keokuk, 76; Sioux City, 68; Omaha, Nebr., 70.

Miscellaneous Phenomena. Aurora, 17th, 24th, 25th, 26th and 31st. Fog, 9th, 14th, 16th, 24th, 27th and 28th. Frost, (light): 31st, at Mt. Ayr. Hail: 14th, 17th, 22d, 29th and 30th. Halo, Solar: 27th. Rainbow: 22d. Thunderstorms. All days except 5th, 9th, 24th, 25th, 26th, 27th and 31st.

Rivers. Moderate stages prevailed on the Missouri River, with a general falling tendency the greater portion of the month; on the Mississippi low stages prevailed, with a falling tendency, until the 17th, when a sharp rise, due to unusually heavy rainfall over the northeastern portion of the

State, occurred. Crest stages occurred at Dubuque on the 18th, at Davenport on the 19th and at Keokuk on the 21st. At the end of the month low stages were general on the Mississippi. The interior rivers were low except for brief periods.

COMPARATIVE DATA FOR THE STATE—AUGUST.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	68.4	— 3.4	102	36	3.41	—0.27	6.44	1.02	------	8	15	10	6
1891	69.1	— 2.7	106	34	4.24	+0.56	13.02	1.23	------	8	13	12	6
1892	71.4	— 0.4	102	40	2.24	—1.44	4.69	0.65	------	5	18	9	4
1893	69.4	— 2.4	101	30	2.32	—1.26	6.22	0.40	------	5	19	9	3
1894	74.6	+ 2.8	108	38	1.58	—2.10	4.53	T.	------	4	21	8	2
1895	71.9	+ 0.1	103	37	4.43	+0.75	10.63	0.67	------	7	17	9	5
1896	71.7	— 0.1	104	34	3.52	—0.16	12.25	0.86	------	8	15	11	5
1897	68.9	— 2.9	104	35	1.86	—1.82	4.98	0.47	------	6	15	11	5
1898	71.2	— 0.6	103	40	3.44	—0.24	10.55	0.58	------	6	17	9	5
1899	74.4	+ 2.6	100	41	3.68	0.00	10.45	1.12	------	7	17	10	4
1900	77.4	+ 5.6	103	44	4.65	+0.97	10.43	1.26	------	6	18	10	3
1901	73.8	+ 2.0	105	40	1.29	—2.39	4.46	T.	------	5	20	9	2
1902	69.1	— 2.7	98	37	6.58	+2.90	15.47	1.57	------	11	11	11	9
1903	69.1	— 2.7	101	41	6.64	+2.96	17.74	2.55	------	11	12	10	9
1904	69.1	— 2.7	97	35	3.43	—0.25	6.75	0.66	------	7	17	8	6
1905	74.3	+ 2.5	104	44	4.05	+0.37	8.47	1.04	------	9	16	9	6
1906	74.1	+ 2.3	101	33	3.95	+0.27	10.51	0.92	------	9	17	9	5
1907	71.1	— 0.7	99	37	4.33	+0.65	9.67	1.05	------	9	17	9	5
1908	70.0	— 1.8	101	38	4.77	+1.09	10.55	1.35	------	9	17	9	5
1909	76.1	+ 4.3	103	33	1.81	—1.87	8.21	T.	------	5	21	8	2
1910	71.9	+ 0.1	104	36	3.88	+0.20	11.22	0.37	------	8	15	10	6
1911	71.7	— 0.1	107	34	3.32	—0.36	9.47	0.44	------	9	16	10	5
1912	71.0	— 0.8	101	40	3.78	+0.10	7.90	0.89	------	10	15	10	6
1913	76.6	+ 4.8	108	40	2.68	—1.00	7.13	0.08	------	6	17	10	4
1914	73.7	+ 1.9	103	40	2.19	—1.49	4.90	0.42	------	7	17	10	4
1915	65.9	— 5.9	91	30	2.81	—0.87	9.14	0.27	------	8	16	8	7
1916	74.0	+ 2.2	106	35	2.58	—1.10	6.23	0.49	------	7	18	9	4
1917	69.4	— 2.4	102	31	2.29	—1.39	6.31	0.70	------	7	19	8	4
1918	76.0	+ 4.2	113	38	3.61	—0.07	8.38	0.54	------	8	16	10	5

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

SEPTEMBER.

September mean temperature, 58.6°, is the lowest of 29 Septembers, except 1896, which was only 0.1° cooler. The deficiency in temperature was greatest, 8°, in the extreme northeast portion and least, 2.6°, in Adams County. The temperature was normal or higher on very few days. During the coolest period, 18th-21st, heavy to killing frosts covered all sections of the State except a distance of about 50 miles west of the Mississippi River, and frosts reached most of the east-central counties on the 27th. Precipitation was deficient except in Floyd and surrounding counties where heavy rains on the 10th caused a monthly excess; also in Wapello and adjacent counties where heavy rains fell on the 2d and 4th.

Due to the great damage by frost last year, the seed corn available for planting this season was limited largely to the earlier varieties. This, together with a favorable season, left little corn subject to damage by the early frosts. That planted after the June floods suffered most.

The garden vegetable season was shortened about three weeks. The dry weather favored the maturing of corn but interfered considerably with the seeding and germination of wheat and rye. Where the moisture was sufficient these crops were up and growing nicely at the close of the month.

Pressure. The mean pressure (reduced to sea level) for the State was 30.09 inches. The highest recorded was 30.51 inches at Dubuque, on the 10th, and the lowest was 29.70 at Davenport, on the 14th. The monthly range was 0.81 inch.

Temperature. The mean temperature for the State, as shown by the records of 96 stations was 58.6°, or 4.8° lower than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 56.7°, or 5.1° lower than the normal; Central, 58.5°, or 5.0° lower than the normal; Southern, 60.5° or 4.5° lower than the normal. The highest monthly mean was 62.4°, at Omaha, Nebr., and the lowest 54.0°, at Postville. The highest temperature reported was 93° at Omaha, Nebr., on the 18th, and the lowest, 21° at Denison, on the 21st. The temperature range for the State was 73°.

Humidity. The average relative humidity for the State at 7 a. m. was 79 per cent and at 7 p. m. 58 per cent. The mean for the month was 68 per cent, which is 6 per cent below normal. The highest monthly mean was 83 per cent at Charles City, and the lowest was 69 per cent at Omaha, Nebr.

Precipitation. The average precipitation for the State, as shown by the records of 108 stations, was 1.87 inches, or 1.49 inches below the normal. By divisions the averages were as follows: Northern, 1.83 inches, or 1.22 inches less than the normal; Central, 1.46 inches, or 2.00 inches less than the normal; Southern, 2.32 inches, or 1.24 inches less than the normal. The greatest amount, 4.62, occurred at Keosauqua, and the least, 0.48 inch, at Cumberland. The greatest amount in 24 consecutive hours 2.82 inches, occurred at Keosauqua, on the 2d.

Wind. The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 34 miles an hour from the northwest at Sioux City, on the 11th, and at Des Moines from the southwest, on the 17th.

Sunshine. The average per cent of the possible amount of sunshine was 63, which is normal. The per cent of the possible amount at regular Weather Bureau stations was as follows: Charles City, 61; Davenport, 56; Des Moines, 60; Dubuque, 55; Keokuk, 75; Sioux City, 65; Omaha, Nebr., 68.

Miscellaneous Phenomena. Aurora, 1st, 21st, 29th, 30th. Fog, dense, 8th, 11th, 12th, 14th, 25th, 27th. Frost, killing, Northern Division, 12th, 16th, 17th, 18th, 19th, 20th, 21st; Central Division, 17th, 18th, 20th, 21st, 27th; Southern Division, 17th, 20th, 21st. Hail, 10th, 11th, 18th, 19th, 20th. Halo (lunar or solar) 17th. Thunderstorms, 1st, 2d, 9th, 10th, 11th, 12th, 14th, 15th, 17th, 18th, 19th, 24th, 25th.

COMPARATIVE DATA FOR THE STATE—SEPTEMBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	59.3	— 4.1	96	23	2.97	—0.39	4.85	1.36	------	7	13	10	7
1891	67.3	+ 3.9	104	28	1.33	—2.06	3.60	0.13	------	4	20	7	3
1892	64.7	+ 1.3	99	29	1.53	—1.83	4.15	0.16	------	4	16	8	6
1893	64.7	+ 1.3	102	18	2.34	—1.02	5.49	0.74	------	4	20	6	4
1894	65.1	+ 1.7	100	26	3.57	+0.21	7.43	0.67	------	8	15	10	5
1895	66.8	+ 3.4	103	22	3.03	—0.33	7.43	0.85	------	5	18	8	4
1896	58.5	— 4.9	95	22	4.09	+0.73	9.96	1.82	------	10	11	9	10
1897	70.9	+ 7.5	106	26	2.04	—1.32	5.88	0.00	------	4	23	5	2
1898	65.3	+ 1.9	99	29	2.69	—0.67	8.45	0.41	------	7	16	9	5
1899	62.5	— 0.9	104	15	0.93	—2.43	4.32	T.	------	4	16	9	5
1900	64.4	+ 1.0	99	26	4.98	+1.62	8.82	2.48	------	9	15	8	7
1901	63.3	— 0.1	102	26	4.77	+1.41	13.62	1.71	------	9	13	9	8
1902	59.1	— 4.3	88	23	4.35	+0.99	10.41	1.65	------	9	15	6	9
1903	60.8	— 2.6	94	28	3.81	+0.45	8.79	1.42	------	10	14	6	10
1904	64.0	+ 0.6	94	30	2.78	—0.58	8.33	0.09	------	7	13	8	9
1905	65.8	+ 2.4	96	36	3.81	+0.45	13.18	0.50	------	8	14	8	8
1906	67.2	+ 3.8	100	27	4.16	+0.80	11.10	0.64	------	8	16	8	6
1907	62.8	— 0.6	98	25	2.75	—1.61	6.06	1.38	------	8	15	9	6
1908	67.9	+ 4.5	98	20	1.20	—2.16	3.46	0.25	------	3	21	6	3
1909	62.4	— 1.0	94	30	3.58	+0.22	7.34	1.39	------	9	14	8	8
1910	63.2	— 0.2	99	30	3.59	+0.23	7.43	1.18	------	9	14	7	9
1911	65.8	+ 2.4	103	32	5.12	+1.76	13.73	1.19	------	10	11	9	10
1912	62.1	— 1.3	104	24	3.98	+0.62	10.12	0.28	------	11	12	8	10
1913	64.5	+ 1.1	107	19	3.31	—0.05	7.44	0.45	------	9	15	8	7
1914	64.5	+ 1.1	99	30	7.88	+4.52	16.24	2.48	------	10	16	7	7
1915	63.7	+ 0.3	91	30	6.03	+2.67	12.45	2.88	------	11	11	8	11
1916	62.5	— 0.9	98	21	3.89	+0.53	9.71	1.45	------	7	17	8	5
1917	62.6	— 0.8	97	28	2.90	—0.46	8.68	0.39	------	7	15	7	8
1918	58.6	— 4.8	93	20	1.87	—1.49	4.62	0.48	------	5	16	8	6

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

OCTOBER.

October was generally warm and pleasant, but with cool periods on the 1st, 24th-26th, and 30th-31st. From the 8th to the 17th the weather was unusually warm. The first killing frost of the season occurred in the extreme eastern counties on the 27th, the rest of the State having had killing frosts in September. Precipitation was well distributed both as to time and area but slightly below normal till a storm center of marked intensity crossed the State from south to north on the 27th, causing heavy to excessive rains, 26th-28th. In the northwest part of the State the precipitation on the 26th was largely in the form of snow.

Corn dried out rapidly and husking and cribbing began early and progressed rapidly. A largely increased acreage of winter wheat in the winter wheat sections of the State made excellent growth. Potato digging was finished and the crop is generally small.

An unusually brilliant aurora was observed during the night of the 8th-9th at Oskaloosa and some other stations.

Pressure. The mean pressure (reduced to sea level) for the State was 30.03 inches. The highest recorded was 30.44 inches, at Dubuque, on the 3d, and lowest was 29.17 inches at Des Moines, on the 27th. The monthly range was 1.27 inches.

Temperature. The mean temperature for the State, as shown by the records of 100 stations, was 55.1°, or 4.3°, higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 52.8°, or 3.8° higher than the normal; Central, 55.5°, or 4.6° higher than the normal; Southern, 57.0°, or 4.4° higher than the normal. The highest monthly mean was 59.0°, at Afton, and the lowest was 50.2° at Northwood. The highest temperature reported was 93°, at Shenandoah, on the 12th; the lowest was 21°, at Sibley, on the 29th. The temperature range for the State was 72°.

Humidity. The average relative humidity for the State at 7 a. m. was 82 per cent, and at 7 p. m. it was 63 per cent. The mean for the month was 72 per cent, or 1 per cent greater than the normal. The highest monthly mean was 78 per cent, at Charles City, and the lowest was 69 per cent at Omaha, Nebr. At Des Moines, the remarkably low humidity of 10 per cent was observed at 1:45 P. M. of the 16th.

Precipitation. The average precipitation for the State, as shown by the records of 110 stations, was 3.64 inches, or 1.18 inches greater than the normal. By divisions the averages were as follows: Northern, 3.34 inches, or 1.00 inch greater than the normal; Central, 3.71 inches, or 1.22 inches greater than the normal; Southern, 3.87 inches, or 1.33 inches greater than the normal. The greatest amount, 7.56 inches, occurred at Thurman, and the least, 1.36 inches, occurred at Mt. Pleasant. The greatest amount in 24 consecutive hours, 3.27 inches, occurred at Boone on the 27th.

Snow. General snow occurred in the northwest portion of the State on the 26th and at its maximum totaled 6 inches over a belt extending from Monona and Woodbury counties to Dickinson and Emmet counties. The snow was soon melted by the heavy rain that followed.

Wind. The prevailing direction of the wind was south. The highest velocity reported from a regular Weather Bureau station was 37 miles per hour, from the south, at Keokuk, on the 27th.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 52, or 9 per cent less than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 48; Davenport, 45; Des Moines, 50; Dubuque, 57; Keokuk, 61; Sioux City, 53; Omaha, Nebr., 47.

Miscellaneous Phenomena. Aurora, 8th, 9th, 12th, 16th. Fog, 1st, 2d, 9th, 12th. Halos, Solar, 2d, 9th, 17th, 24th. Halos, Lunar, 15th, 16th, 17th, 21st, 24th. Rainbow, 8th. Sleet, 25th, 26th, 27th, 30th, 31st. Smoke, 17th. Thunderstorms, 7th, 8th, 27th, 28th. Killing Frosts, Northern Division, 3d, 25th, 30th; Central Division, 14th, 25th, 26th, 28th, 31st; Southern Division, 28th.

COMPARATIVE DATA FOR THE STATE—OCTOBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	49.2	— 1.6	86	16	3.48	+1.02	6.82	1.59	------	7	11	11	9
1891	50.0	— 0.8	92	19	2.77	+0.31	6.53	0.85	------	6	18	7	6
1892	54.5	+ 3.7	96	14	1.55	—0.91	2.58	0.00	0.0	4	21	6	4
1893	52.4	+ 1.6	94	10	1.28	—1.18	4.56	0.02	0.0	4	16	9	6
1894	51.7	+ 0.9	90	20	2.67	+0.21	5.25	0.03	0.2	8	14	8	9
1895	46.0	— 4.8	88	4	0.47	—1.99	1.38	0.00	T.	2	19	8	4
1896	47.9	— 2.9	88	12	3.13	+0.67	5.05	1.51	T.	5	18	6	7
1897	56.8	+ 6.0	97	12	1.14	—1.32	3.30	0.03	0.0	4	17	8	6
1898	47.5	— 3.3	88	17	3.56	+1.10	5.75	1.27	3.6	8	7	9	15
1899	56.7	+ 5.9	95	17	1.73	—0.73	4.64	0.15	0.0	5	17	8	6
1900	59.3	+ 8.5	90	21	3.91	+1.45	8.00	1.20	0.0	7	16	7	8
1901	54.2	+ 3.4	88	20	1.98	—0.48	4.23	0.45	T.	6	17	7	7
1902	53.5	+ 2.7	83	20	2.54	+0.08	6.66	0.28	T.	5	16	8	7
1903	52.2	+ 1.4	90	16	1.95	—0.51	4.50	0.32	0.0	5	19	6	6
1904	53.1	+ 2.3	96	16	1.67	—0.79	4.43	0.14	T.	6	15	8	8
1905	49.2	— 1.6	95	16	3.40	+0.94	5.36	1.20	1.6	8	16	6	9
1906	50.5	— 0.3	87	7	1.96	—0.50	4.25	0.50	0.1	6	14	7	10
1907	50.4	— 0.4	85	10	1.50	—0.96	3.71	0.30	0.0	5	20	5	6
1908	51.1	+ 0.3	89	17	3.38	+0.92	8.83	0.58	2.6	8	16	6	9
1909	49.7	— 1.1	97	10	2.22	—0.24	4.70	0.48	T.	6	16	6	9
1910	55.2	+ 4.4	93	10	0.77	—1.69	1.73	T.	0.1	4	21	4	6
1911	48.7	— 2.1	87	14	3.34	+0.88	7.03	0.73	0.6	10	12	8	11
1912	52.2	+ 1.4	92	16	2.98	+0.52	5.77	1.03	T.	6	21	3	7
1913	49.2	— 1.6	89	—2	3.03	+0.57	7.29	0.35	1.2	9	15	8	8
1914	55.9	+ 5.1	88	14	3.23	+0.77	6.64	0.74	T.	9	16	6	9
1915	54.4	+ 3.6	86	19	1.31	—1.15	3.25	-T.	T.	5	19	6	6
1916	50.9	+ 0.1	92	6	2.00	—0.46	4.33	0.20	2.0	8	16	7	8
1917	42.9	— 7.9	85	0	1.41	—1.05	4.00	0.15	2.2	6	10	11	10
1918	55.1	+ 4.3	93	21	2.64	+1.18	7.56	1.36	0.8	7	13	7	11

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

NOVEMBER.

Mild temperature prevailed particularly from the 2d to the 19th, though cool, 23d-26th. Precipitation was well distributed both as to time and area, and was above normal in all but the east-central and some extreme northeast counties and portions of Boone, Dallas and Adair counties. Most of the precpiitation occurred in the heavy rain and snow storm of Thanksgiving Day, the 28th. Part of the snow lay on the ground at the close of the month, except in the northwest.

Corn husking progressed rapidly, 91 per cent being finished; yield slightly below normal; quality, excellent, only 4 per cent being soft. There was abundant moisture and warmth for winter wheat which made good growth and is entering the winter in excellent condition, 95 per cent having become well established. Because of labor shortage, less than the usual amount of fall plowing was done.

Pressure. The mean pressure (reduced to sea level) for the State was 30.04 inches. The highest recorded was 30.70 inches, at Sioux City, on the 23d, and the lowest was 29.03 inches, at Davenport, on the 28th. The monthly range was 1.67 inches.

Temperature. The mean temperature for the State, as shown by the records of 102 stations was 39.9°, or 4.9° higher than the normal. By divisions, three tiers of counties to the division, the means were as follows: Northern, 38.1°, or 5.3° higher than the normal; Central, 40.0°, or 4.9° higher than the normal; Southern, 41.5°, or 4.4° higher than the normal. The highest monthly mean was 43.8°, at Keokuk, and the lowest was 36.0°, at Mason City and Sibley. The highest temperature recorded was 76° at Bloomfield, Fairfield, Keosauqua, Ottumwa, Stockport and Washington, on the 6th, and the lowest, zero, at Mason City, on the 25th. The temperature range for the State was 76°.

Humidity. The average relative humidity for the State at 7 a. m. was 84 per cent and at 7 p. m. 71 per cent. The mean for the month was 78 per cent, which is 4 per cent above the normal. The highest mean was 84 per cent at Charles City, and the lowest, 74 per cent, at Dubuque and Keokuk.

Precipitation. The average precipitation for the State, as shown by the records of 109 stations, was 2.11 inches, or 0.60 inch above the normal. By divisions the averages were as follows: Northern, 2.36 inches, or 0.95 inch greater than the normal; Central, 1.84 inches, or 0.31 inch greater than the normal; Southern, 2.13 inches, or 0.55 inch greater than the normal. The greatest amount, 5.10 inches, occurred at Northwood, and the least, 0.70 inch, at Cedar Rapids. The greatest amount in 24 consecutive hours, 2.07 inches, occurred at Sibley on the 16th.

Snowfall. The average fall for the State was 4.4 inches, which is 1.9 inches more than the normal. The heaviest fall was 9.5 inches at Fayette Practically the entire fall of snow occurred on the 27th and 28th when one of the largest November snows on record occurred over a large portion of the State. The snowfall was light over the northwest and southeast portions, a few stations reporting only traces.

Wind. The prevailing direction of the wind was from the northwest. The highest velocity reported from a regular Weather Bureau station was at the rate of 49 miles per hour, from the northwest, at Sioux City, on the 17th.

Sunshine. The average per cent of the possible amount of sunshine was 52, or 4 per cent less than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 44; Davenport, 49; Des Moines, 51; Dubuque, 55; Keokuk, 59; Sioux City, 50; Omaha, Nebr., 53. There was an unusual period of almost continuous cloudiness 15th-23d.

Miscellaneous Phenomena. Aurora, 10th, 11th, 29th, 30th. Fog, dense, 2d, 3d, 4th, 5th, 7th, 10th, 15th, 16th, 17th, 26th. Hail, 7th, 16th, 18th, 21st. Halo, lunar, 12th. Halo, solar, 2d, 12th. Rainbow, 16th. Sleet, 17th, 20th, 21st, 27th, 28th. Thunderstorms, 3d, 6th, 8th, 16th, 17th, 18th.

COMPARATIVE DATA FOR THE STATE—NOVEMBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	38.6	+ 3.6	78	— 2	1.46	—0.05	3.55	0.71	------	3	15	8	7
1891	30.5	— 4.5	84	—24	1.70	+0.19	3.64	0.06	------	7	10	8	12
1892	33.3	— 1.7	70	— 3	1.10	—0.41	3.16	0.05	1.8	4	11	8	11
1893	34.0	— 1.0	86	—13	1.17	—0.34	2.56	0.05	4.6	4	16	8	6
1894	32.7	— 2.3	72	— 5	0.92	—0.59	2.42	T.	0.4	4	9	11	10
1895	34.3	— 0.7	86	—12	1.51	0.00	3.01	0.45	4.9	6	9	8	13
1896	29.6	— 5.4	82	—15	1.83	+0.32	4.51	0.16	2.9	6	9	8	13
1897	34.3	— 0.7	81	—19	0.66	—0.85	2.24	T.	1.2	5	12	8	10
1898	32.2	— 2.8	78	—17	1.50	—0.01	3.61	0.33	8.7	6	14	8	8
1899	43.9	+ 8.9	86	8	1.20	—0.31	2.97	0.13	0.5	5	12	8	10
1900	33.5	— 1.5	79	— 6	1.06	—0.45	3.35	T.	3.7	6	12	7	11
1901	35.8	+ 0.8	77	2	0.86	—0.65	2.30	0.20	2.6	3	18	6	6
1902	41.2	+ 6.2	79	4	2.13	+0.62	4.19	0.16	1.8	7	9	7	14
1903	34.2	— 0.8	76	— 5	0.52	—0.99	1.74	T.	1.1	3	13	8	9
19 4	41.0	+ 6.0	80	4	0.15	—1.36	0.50	0.00	0.5	1	20	6	4
1905	38.4	+ 3.4	70	—12	2.84	+1.33	5.30	0.90	0.6	5	16	7	7
1906	35.4	+ 0.4	76	— 5	2.03	+0.52	3.86	0.35	4.4	8	9	7	14
1907	36.7	+ 1.7	68	— 4	1.03	—0.48	2.27	0.05	0.9	4	17	6	7
1908	39.3	+ 4.3	80	5	1.56	+0.05	3.31	0.21	1.4	5	14	7	9
1909	42.4	+ 7.4	84	— 3	5.39	+3.88	11.48	2.07	6.8	10	10	7	13
1910	33.4	— 1.6	76	5	0.34	—1.17	1.03	T.	0.7	3	13	9	8
1911	29.9	— 5.1	79	— 8	1.42	—0.09	4.99	0.11	1.6	6	11	8	11
1912	40.1	+ 5.1	77	6	0.98	—0.53	2.38	0.00	T.	2	18	8	4
1913	44.1	+ 9.1	78	10	1.18	—0.33	3.49	0.20	0.4	6	11	7	12
1914	41.0	+ 6.0	80	— 4	0.22	—1.29	0.95	0.00	T.	2	19	6	5
1915	40.2	+ 5.2	83	— 5	1.94	+0.43	4.86	0.30	1.2	6	11	10	9
1916	37.3	+ 3.3	80	— 8	1.61	+0.10	3.65	0.05	3.6	5	16	6	8
1917	40.7	+ 5.7	77	3	0.28	—1.23	1.02	T.	1.4	3	14	6	10
1918	39.9	+ 4.9	76	[illegible]	2.11	+0.60	5.10	0.70	4.4	7	13	5	12

T indicates an amount too small to measure, or less than .005 inch precipitation, and less than .05 inch snowfall.

DECEMBER.

This was the warmest December in the 29 years state-wide records have been compiled and was in striking contrast with December, 1917, which was the coldest. The excess in temperature was rather evenly distributed over the State and averaged 8.8 degrees. Precipitation was evenly distributed and slightly above normal, the largest excesses being in the southeast counties, particularly portions of Mahaska, Louisa and Van Buren. Deficiencies occurred in the west-central counties and northeast to the Mississippi River.

Frost left the ground early in the month. The mild weather with precipitation above normal through the fall put roads in the worst condition in many years. As they were practically impassible for heavy traffic, comparatively little corn or other farm produce was marketed. Aside from this, outdoor occupations made unusual progress; fall plowing which had been delayed by labor shortage was brought up to or above normal, continuing in the north till the 21st, and in the south till the 24th; and corn husking was practically finished. Winter wheat made good growth and was pastured some in the southwest to check over-growth. Heavy snow covered the southeastern part of the state on the 24th, amounting to a foot or more in several counties. The ground was not frozen when the growing wheat was covered with this heavy snow blanket. While this is generally believed to be a favorable condition, some adverse opinion has been expressed. If the snow remains porous and does not become converted into an impervious ice sheet by thawing, harm can scarcely result. Fruit buds, though slightly swelled in the south, are believed to be generally safe. Dandelions bloomed in the extreme southeast. Fuel and feed were saved. Livestock subsisted out of doors and was in good condition generally, except hogs which were widely afflicted with influenza, which caused thinness but little mortality. A cold wave preceded by general snow was sweeping southeastward over the State at the close of the month.

Pressure. The mean pressure (reduced to sea level) for the State was 30.04 inches. The highest recorded was 30.51 inches, at Dubuque, on the 18th and at Sioux City on the 23d, and the lowest was 29.29 inches at Sioux City on the 9th. The monthly range was 1.22 inches.

Temperature. The mean temperature for the State, as shown by the means of 98 stations, was 32.7°, or 8.8° higher than the normal. By divisions, three tiers of counties to the division, the mean temperatures were as follows: Northern, 30.5°, or 9.3° higher than the normal; Central, 32.8°, or 8.7° higher than the normal; Southern, 34.7°, or 3.3° higher than the normal. The highest monthly mean was 37.8° at Keokuk, and the lowest monthly mean was 28.9° at Postville. The highest temperature reported was 68° at Columbus Junction on the 8th, and the lowest temperature reported was—7°, at Maquoketa, on the 26th, and at Thurman on the 25th, the range for the State being 75°.

Humidity. The average relative humidity for the State at 7 a. m. was 86 per cent, and at 7 p. m. it was 79 per cent. The mean for the month was 82 per cent, or about 2 per cent above normal. The highest monthly mean was 89 per cent at Charles City, and the lowest reported was 78 per cent, at Keokuk and at Omaha, Nebr.

Precipitation. The average precipitation for the State, as shown by the records of 105 stations, was 1.30 inches, or 0.08 inch more than the normal. By divisions, the averages were as follows: Northern, 1.11 inches, or 0.04 inch more than the normal; Central, 1.24 inches, or 0.01 inch less than the normal; Southern, 1.55 inches, or 0.08 inch more than the normal. The greatest amount, 3.30 inches, occurred at Oskaloosa, and the least, 0.37 inch at LeMars. The greatest amount in any 24 consecutive hours, 1.55 inches, occurred at Oskaloosa, on the 24th.

Snow. The average snowfall for the state was 5.1 inches, or 1.1 inches below normal. The greatest amount, 16.3 inches, occurred at Columbus Junction, and the least, a trace, at 5 stations.

Wind. The prevailing direction of the wind was from the northwest. The highest velocity reported was at the rate of 49 miles an hour from the northwest, at Sioux City, on the 31st.

Sunshine and Cloudiness. The average per cent of the possible amount of sunshine was 38 per cent, or about 10 per cent less than the normal. The per cent of the possible amount at the regular Weather Bureau stations was as follows: Charles City, 23; Davenport, 34; Des Moines, 40; Dubuque, 34; Keokuk, 54; Sioux City, 41; and Omaha, Nebr., 40 per cent. The average number of clear days was 9; partly cloudy, 8; cloudy, 14.

Miscellaneous Phenomena. Aurora, 2d, 7th, 8th, 25th, 29th, 31st. Fog, 1st, 8th, 9th, 10th, 12th, 13th, 14th, 16th, 17th, 18th, 19th, 20th, 21st, 22d, 29th, 30th. Hail, 1st, 30th. Halos (lunar or solar), 1st, 2d, 7th, 15th, 16th, 17th, 19th, 25th, 31st. Parhelia, 31st. Sleet, 1st, 30th. Thunderstorms, 2d, 8th, 9th.

COMPARATIVE DATA FOR THE STATE—DECEMBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1890	29.1	+ 5.2	72	—18	0.45	—0.77	1.40	0.00	------	3	17	7	7
1891	32.3	+ 8.4	72	—14	2.41	+1.19	4.50	1.21	------	6	14	9	8
1892	18.9	— 5.0	68	—29	1.65	+0.43	3.04	0.20	10.9	8	9	8	14
1893	22.0	— 1.9	70	—21	1.31	+0.09	2.80	0.46	7.6	7	10	9	12
1894	30.1	+ 6.2	73	—17	0.95	—0.27	1.75	0.25	1.3	3	15	6	10
1895	25.4	+ 1.5	63	—16	1.63	+0.41	5.74	0.00	4.1	5	11	9	11
1896	30.8	+ 6.9	70	—10	0.65	—0.57	1.79	T.	1.6	4	10	8	13
1897	18.0	— 5.9	60	—25	1.65	+0.43	3.22	0.61	15.9	6	11	7	13
1898	18.1	— 5.8	60	—25	0.48	—0.74	1.70	T.	3.9	3	15	8	8
1899	22.6	— 1.3	75	—19	1.61	+0.39	4.28	0.10	4.3	5	12	9	10
1900	26.9	+ 3.0	63	—10	0.45	—0.77	2.70	T.	2.4	4	13	6	12
1901	20.5	— 3.4	64	—31	0.93	—0.29	2.75	0.05	5.4	6	10	9	12
1902	20.1	— 3.8	59	—20	2.23	+1.01	5.51	0.67	12.9	8	9	6	16
1903	19.6	— 4.3	58	—27	0.41	—0.81	1.96	T.	3.7	4	11	9	11
1904	23.4	— 0.5	67	—19	1.44	+0.22	3.68	0.06	12.3	5	12	7	12
1905	27.0	+ 3.1	62	—11	0.52	—0.70	1.69	T.	4.2	3	19	6	6
1906	25.7	+ 1.8	65	— 9	1.43	+0.21	2.81	0.37	1.4	6	11	7	13
1907	28.8	+ 4.9	62	— 9	1.00	—0.22	2.28	0.05	4.7	5	10	7	14
1908	27.2	+ 3.3	67	—17	0.57	—0.65	2.07	0.05	3.8	3	15	8	8
1909	15.1	— 8.8	60	—26	2.18	+0.96	6.10	0.89	13.7	11	10	5	16
1910	23.4	— 0.5	57	—14	0.37	—0.85	1.39	0.01	3.0	3	15	7	9
1911	27.9	+ 4.0	60	—24	2.57	+1.35	4.43	0.62	12.6	7	13	6	12
1912	29.2	+ 5.3	64	—13	0.74	—0.48	1.75	0.10	1.1	3	18	7	6
1913	32.0	+ 8.1	65	—13	1.02	—0.20	4.73	0.00	1.3	4	15	5	11
1914	15.7	— 8.2	63	—31	1.30	+0.80	2.24	0.57	11.1	9	10	6	15
1915	25.0	+ 1.1	56	—10	0.69	—0.53	1.70	T.	4.6	5	11	8	12
1916	18.7	— 5.2	67	—25	1.04	—0.18	2.00	0.35	6.7	6	15	8	8
1917	14.5	— 9.4	62	—40	0.56	—0.66	1.70	0.14	6.7	6	10	9	12
1918	32.7	+ 8.8	68	— 7	1.30	+0.08	3.30	0.37	5.1	8	9	8	14

T. indicates an amount too small to measure, or less than .005 inch precipitation and less than .05 inch snowfall.

MONTHLY STATE DATA FOR 1918.

Month	Barometric Pressure, Inches (Sea level).					Temperature, Degrees, F.				Relative umidity %		Precipitation, Inches.					Number of Days.				shine.		Wind.	
	Mean.	Highest.	Date.	Lowest.	Date.	Mean.	Departure from normal.	Highest.	Lowest.	Mean. $\frac{\text{7 a.m.+7 p.m.}}{2}$	Departure from normal.	Average.	Departure from normal.	Greatest.	Least.	Snowfall.	.01 inch or more precipitation.	Clear.	Partly cloudy.	Cloudy.	Per cent of the possible amount.	Departure from normal.	Average hourly velocity.	Prevailing direction.
January	30.03	30.82	31	29.34	12	8.6	—9.3	53	—35	82	+1	1.02	—0.03	2.79	0.26	11.2	7	13	8	10	53	+3	9.6	NW.
February	30.06	31.07	21	29.02	14	23.0	+2.5	70	—36	78	—1	0.95	—0.20	2.10	0.09	6.0	5	14	7	7	62	+7	9.3	SW.
March	30.03	30.71	15	29.12	9	42.9	+9.6	85	0	63	—10	0.63	—1.14	2.12	T.	2.6	3	19	7	5	73	+16	9.1	SW.
April	30.01	30.78	9	29.23	29	44.8	—3.9	79	12	62	—5	2.32	—0.54	4.20	1.01	3.5	9	12	8	10	60	0	9.6	NE.
May	29.91	30.43	23	29.09	9	64.9	+4.4	98	25	66	+1	6.87	+2.30	11.98	2.72	T.	13	13	11	7	66	+4	10.0	SW.
June	29.93	30.33	7	29.56	1	70.8	+1.7	104	38	69	0	5.29	+0.91	10.19	1.55	0	11	16	10	4	69	+1	7.5	SE.
July	30.02	30.31	12	29.65	3	73.1	—1.0	105	40	66	—1	3.17	—0.79	8.05	0.26	0	8	19	8	4	72	—2	6.3	SE.
August	29.93	30.30	19	29.58	5	76.0	+4.2	113	38	67	—4	3.61	—0.07	8.38	0.54	0	8	16	10	5	68	—3	6.7	SW.
September	30.09	30.51	10	29.70	14	58.6	—4.8	93	20	68	—6	1.87	—1.49	4.62	0.48	0	6	16	8	6	63	0	6.3	NW.
October	30.03	30.44	3	29.17	27	55.1	+4.3	93	21	72	+1	3.64	+1.18	7.56	1.36	0.8	7	13	7	11	52	—9	7.6	S.
November	30.04	30.70	23	29.03	28	39.9	+4.9	76	0	78	+4	2.11	+0.60	5.10	0.70	4.4	7	13	5	12	52	—4	8.9	NW.
December	30.04	30.51	18	29.29	9	32.7	+8.8	68	—7	82	+2	1.30	+0.08	3.30	0.37	5.1	8	9	8	14	38	—10	7.9	NW.
Means and extremes	30.01	31.07		29.02		49.2	+1.8	113	—36	71	—2	32.78	+0.81	11.98	0.09	33.6	92	173	97	95	61	0	8.2	SW.

COMPARATIVE DATA FOR THE STATE—Annual.

	Temperature					Precipitation in Inches.			
Year.	Mean annual.	Highest.	Date.	Lowest.	Date.	Annual.	Greatest annual.	Least annual.	Av. snowfall.
1890	48.0	110	July 13	—27	January 22	31.30	45.74	16.00	------
1891	47.3	106	August 9	—31	February 4	32.90	49.05	23.48	------
1892	46.6	104	July 11	—38	January 19	36.58	48.77	24.78	34.2
1893	45.7	102	July* 13	—36	January 14	27.59	33.27	19.19	37.2
1894	49.7	109	July 26	—37	January 25	21.94	29.81	15.65	19.2
1895	47.2	104	May 28	—33	February 1	26.77	35.25	18.57	26.0
1896	48.6	104	July 3	—20	January 4	37.23	51.60	28.68	22.6
1897	47.8	106	July* 23	—30	January 25	26.98	36.18	20.21	38.8
1898	47.7	103	August 20	—25	December 31	31.34	55.47	19.51	40.3
1899	47.3	104	September 6	—40	February 11	28.68	42.06	21.79	23.4
1900	49.3	103	August 3	—27	February 15	35.05	47.33	25.05	25.8
1901	49.0	113	July 22	—31	December 15	24.41	37.69	16.35	38.5
1902	47.7	98	July 30	—31	January 27	43.82	58.80	20.14	28.0
1903	47.2	101	August 24	—27	December 13	35.39	50.53	26.41	19.4
1904	46.3	100	July 17	—32	January 27	28.51	38.93	19.34	29.2
1905	47.2	104	August 11	—41	February* 2	36.56	52.26	24.66	38.3
1906	48.4	102	July 21	—32	February 10	31.60	44.34	20.63	32.8
1907	47.4	102	July 5	—31	February 5	31.61	43.90	19.93	24.0
1908	49.5	101	August 3	—18	January 29	35.26	49.98	24.11	22.7
1909	47.4	103	August* 15	—26	February* 15	40.01	53.48	27.20	49.0
1910	48.6	108	July 16	—35	January 7	19.87	27.99	12.11	23.4
1911	49.5	111	July* 3	—35	January 3	31.37	46.77	19.74	35.3
1912	46.4	104	September 8	—47	January 12	28.89	33.13	15.25	39.5
1913	49.7	108	July* 16	—25	January 8	29.95	45.18	20.31	25.4
1914	49.1	109	July 12	—31	December 26	31.93	44.11	23.30	27.5
1915	47.8	99	May 14	—32	January 28	39.53	51.15	27.29	31.3
1916	47.2	106	August 4	—34	January 13	28.90	46.34	22.48	29.5
1917	44.8	106	July 30	—40	December 29	27.81	36.00	20.78	32.4
1918	49.2	113	August 4	—36	February 4	32.78	47.53	25.03	33.4

*And other dates.

DATES OF KILLING FROSTS, 1918.

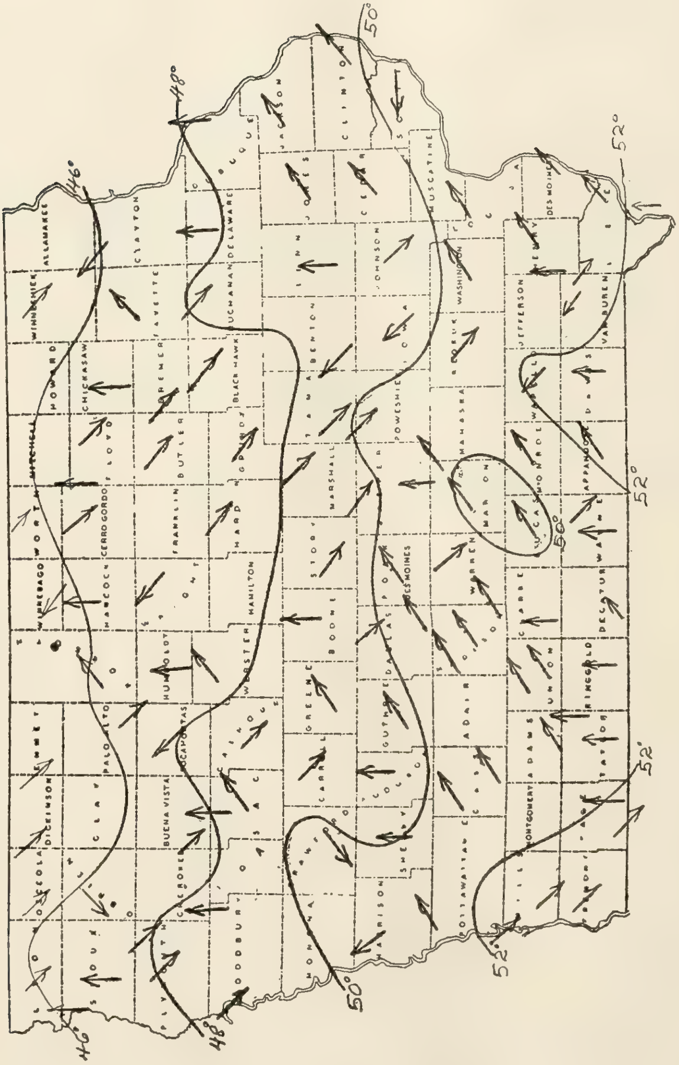
STATIONS.	Killing Frosts.	
	Last in Spring.	First in Autumn.
Northern Division—		
Algona	May 13	Sept. 18
Allison	May 13	Sept. 20
Alta	May 11†	Sept. 20
Alton	Apr. 30†	Sept. 18
Belmond	May 14	Sept. 20
Britt	May 13	Sept. 20
Charles City	May 1	Sept. 21
Decorah	May 13†	Sept. 21
Elkader	May 13	Sept. 21
Estherville	May 14†	Sept. 18
Fayette	May 13	Sept. 20
Forest City	May 13	Sept. 20
Humboldt	May 13	Sept. 20
Inwood	May 10†	Sept. 18
Lake Park	May 13†	Sept. 18†
LeMars	Apr. 28†	Sept. 18†
Mason City	May 13†	Sept. 20
New Hampton	May 13†	Sept. 21†
Nora Springs	May 13	Sept. 21†
Northwood	May 13†	Sept. 21†
Pocahontas	May 1	Sept. 20
Postville	May 13†	Sept. 21
Rock Rapids	Apr. 30†	Sept. 18
Sanborn	May 13†	Sept. 18
Sibley	May 13†	Sept. 16
Sioux Center	May 10†	Sept. 18†
Storm Lake	Apr. 30†	Sept. 20†
Washta	May 10†	Sept. 16†
Waverly	May 13	Sept. 21
West Bend	May 13†	Sept. 18†

STATIONS.	Killing Frosts.	
	Last in Spring.	First in Autumn.
Central Division—		
Ames	May 1†	Sept. 20†
Audubon	May 13†	Sept. 20†
Baxter	Apr. 25†	Sept. 20
Belle Plaine	May 13	Sept. 21
Boone	Apr. 26†	
Carroll	May 13†	Sept. 20
Cedar Rapids	May 2†	Sept. 21
Clinton	May 1	Oct. 24
Davenport	Apr. 19†	Oct. 25
Delaware	May 13†	Oct. 25
Denison	May 13†	Sept. 20
Des Moines	Apr. 20†	Sept. 20
Dubuque	Apr. 25†	Oct. 25
Fort Dodge	Apr. 25†	Sept. 20
Grinnell	May 1	Sept. 21
Grundy Center	May 1	Sept. 21
Guthrie Center	May 13†	Sept. 20
Harlan	May 13†	Sept. 20
Independence	May 13†	Sept. 21†
Iowa City	May 2†	Sept. 21†
Iowa Falls	May 14†	Sept. 20†
Jefferson	Apr. 30†	Sept. 20
Little Sioux	Apr. 30†	Sept. 20
Logan	Apr. 25†	Sept. 20
Maquoketa	May 1†	Sept. 27
Marshalltown	May 1	Sept. 21
Monroe	May 1†	Oct. 25
Olin	May 1†	Sept. 27
Onawa		Sept. 18
Perry	May 1†	Sept. 20
Rockwell City	Apr. 30†	Sept. 20†
Sac City	Apr. 26†	Sept. 21†
Sioux City	Apr. 10	Sept. 18
Tipton	May 1†	Oct. 25†
Toledo	May 13†	Sept. 20†
Waterloo	May 3†	Sept. 21†
Waukee	May 1	Sept. 20
Webster City	May 13†	Sept. 20†
Williamsburg	May 1†	Sept. 21

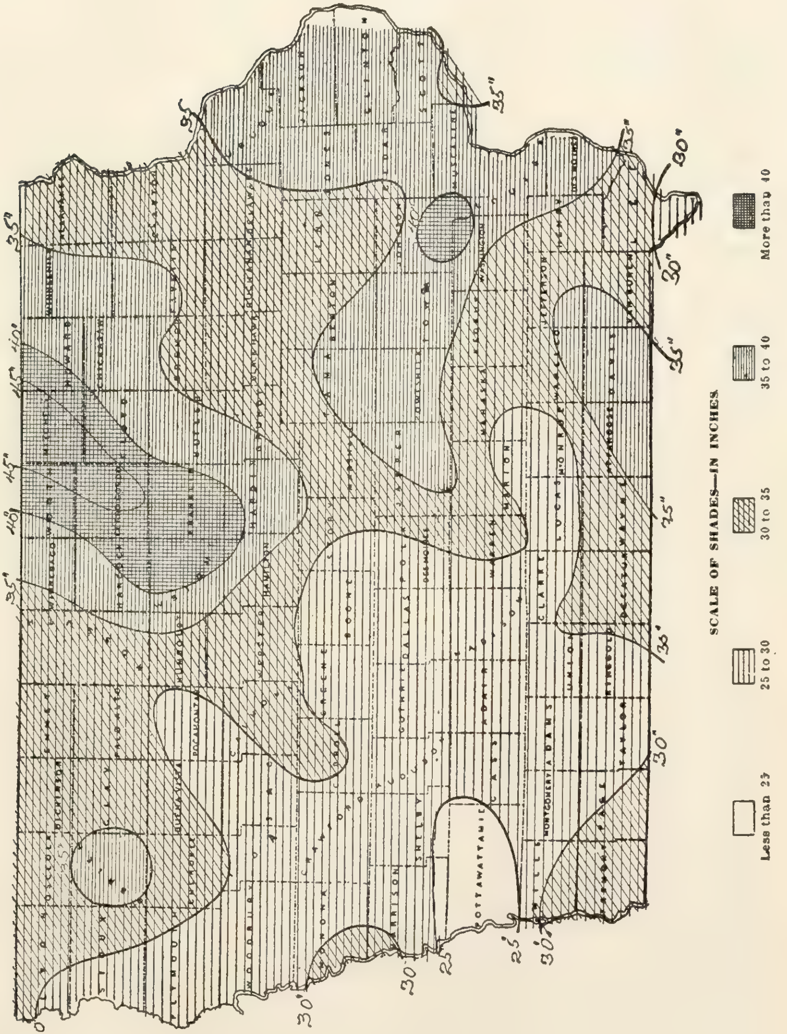
STATIONS.	Killing Frosts.	
	Last in Spring.	First in Autumn.
Southern Division—		
Afton	Apr. 21†	Sept. 20†
Albia	Apr. 22†	Sept. 20†
Allerton	Apr. 30†	Sept. 20
Atlantic	May 1†	Sept. 20
Bedford	May 1†	Sept. 20
Bloomfield	Apr. 21†	Sept. 20
Bonaparte	Apr. 21†	Sept. 21†
Burlington	Apr. 21†	Nov. 1
Centerville	Apr. 21†	Sept. 21
Chariton	May 1†	Sept. 20
Clarinda	May 1†	Sept. 20
Columbus Junction	May 1†	Oct. 25†
Corning	May 1†	Sept. 20†
Corydon		Sept. 20†
Creston	May 1†	Sept. 20†
Cumberland		
Earlham	May 1†	Sept. 30†
Fairfield	May 1†	
Ft. Madison	May 1	Sept. 29
Glenwood	Apr. 25†	Sept. 20
Greenfield	Apr. 30†	
Indianola	Apr. 13	Sept. 20
Keokuk	Apr. 10	Nov. 1
Keosauqua	May 1†	Sept. 21
Knoxville	May 1†	Sept. 20†
Lamoni	Apr. 23†	Sept. 20†
Lenox	Apr. 28	Sept. 20
Mt. Ayr	Apr. 21†	Sept. 20
Mt. Pleasant	May 1†	Oct. 25†
Murray	Apr. 21†	Sept. 30†
Northboro	Apr. 21†	Sept. 20
Oskaloosa	May 1†	Sept. 21
Ottumwa	Apr. 21†	Sept. 21†
Pella	May 1	Sept. 21
St. Charles	Apr. 21†	Sept. 21
Shenandoah		
Sigourney	May 1†	Sept. 20
Stockport	May 1†	Sept. 21
Thurman	May 1†	Sept. 20
Washington	May 1†	Sept. 25
Winterset	Apr. 25	Sept. 20
Omaha, Nebr.	Apr. 9†	Oct. 28

†Date of last temperature of 32 or lower in the spring, or first temperature of 32 or lower in the autumn (as the case may be) when frost was not reported.

MEAN ISOTHERMS AND PREVAILING WINDS, YEAR 1918.


46°
48°
50°
52°
50°
WINNESHIEK
ALLAMAKEE
HOWARD
CHICKASAW
CLAYTON
FAYETTE
BREMER
DELAWARE
BUCHANAN
BLACK HAWK
BUTLER
FRANKLIN
CERRO GORDO
HANCOCK
WINNEBAGO
HUMBOLDT
PALO ALTO
CLAY
DICKINSON
OSCEOLA
BUENA VISTA
POCAHONTAS
CHEROKEE
WOODBURY
HAMILTON
WEBSTER
JACKSON
CLINTON
MUSCATINE
JOHNSON
WASHINGTON
JEFFERSON
DES MOINES
VAN BUREN
POWESHIEK
MARSHALL
STORY
BOONE
GREENE
CARROLL
DES MOINES
KEOKUK
MAHASKA
MARION
WARREN
ADAIR
POTTAWATTAMIE
HARRISON
MONTGOMERY
RINGGOLD
DECATUR

TOTAL PRECIPITATION, YEAR 1918.


SCALE OF SHADES—IN INCHES
Less than 25
25 to 30
30 to 35
35 to 40
More than 40
35"
40"
45"
45"
40"
35"
30"
25"
20"
30"
35"
30"
25"
30"
30"
25"
30"
35"
95
JACKSON
CLINTON
SCOTT
MUSCATINE
JONES
LINN
BENTON
JOHNSON
IOWA
POWESHIEK
TAMA
JASPER
POLK
DALLAS
GUTHRIE
BOONE
GREENE
STORY
HAMILTON
HARDIN
GRUNDY
BLACK HAWK
BUCHANAN
FRANKLIN
BUTLER
BREMER
CHICKASAW
HOWARD
WINNESHIEK
ALLAMAKEE
CLAYTON
FAYETTE
MITCHELL
WORTH
WINNEBAGO
HANCOCK
CERRO GORDO
KOSSUTH
HUMBOLDT
POCAHONTAS
BUENA VISTA
CHEROKEE
PLYMOUTH
SIOUX
O'BRIEN
CLAY
PALO ALTO
EMMET
DICKINSON
OSCEOLA
WOODBURY
MONONA
HARRISON
SHELBY
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
JEFFERSON
VAN BUREN
LEE
HENRY
DES MOINES
WAPELLO
DAVIS
APPANOOSE
WAYNE
DECATUR
RINGGOLD
TAYLOR
PAGE
FREMONT
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WEBSTER
DES MOINES
CEDAR

CLIMATE AND CROP REVIEW.

The winter of 1917-18 was one of the coldest, averaging 5.4° below normal and only 0.5° warmer than 1892-93, the coldest of record. Snowfall averaged 3.4 inches more than the normal and because of the continuous cold weather and the absence of sleet and rain the snow covering was generally porous and continuous, except in some west and southwest counties. Winter wheat, except where seeded in corn fields, was generally blown bare of snow.

March was abnormally warm with deficient precipitation, except in the northern tier of counties. Frost left the ground early in the month; the soil worked up in fine condition; seeding of spring wheat and oats was completed in the south and made rapid progress in the north portions; and husking of the 1917 corn crop which had been delayed by the soft condition of the corn and by the severity of the winter, was about finished. Winter wheat came through the winter in good condition, especially in the southeast counties. Some that had apparently not germinated in the fall of 1917, germinated in March, and though there was considerable difference of opinion among the farmers and others as to whether this would make a crop, it is known that in many instances it did make a crop of 15 to 25 bushels per acre. The drouth of March continued till the middle of April, except scattered showers or snows during the first week. The drouth, high winds and low humidity killed some of the winter wheat and much of the young clover, timothy and alfalfa. On March 18, a number of stations reported the lowest relative humidity ever recorded. At Des Moines it was 5 per cent at 2 and 3 p. m. A large acreage of winter wheat, hay and pasture land was plowed up. Considerable early spring wheat was drilled in with the winter wheat where the stand was thin and patchy.

Iowa's hay and pasture land was decreased by about three quarters of a million acres, the acreage of other crops, mainly corn, spring wheat and barley, being correspondingly increased. The acreage of spring wheat would have been much larger if sufficient cars had been available to transport the seed. The dry weather of the early spring and the cold weather of April made germination of spring grains very irregular. They depended largely upon subsoil moisture till the middle of April. Warmer weather with copious showers toward the close of April improved grains; some that had been seeded six weeks previously had just begun to show green at the end of the month. A heavy snowstorm extended across the State from southwest to northeast on April 19th-21st. In Taylor County this snow accumulated to the unusual depth of 2 feet or more, exceeding the total fall of the winter months preceding.

Favorable weather offset the unfavorable labor conditions. Spring work progressed rapidly. Eighty-five per cent of the corn ground was ready for the planter and a little planting had been done by the close of April. Seed corn was scarce and of very low vitality due to the lateness of the crop and the damaging frosts in 1917. Unprecedented efforts of county agents and farmers in seed testing, and cautious delay in planting most of the acreage after the ground was warm and the weather fit, resulted in a good stand of corn.

Violent temperature fluctuations, from freezing to 95°, May 1st to 4th, with high southwest winds and low humidities, did further damage to winter wheat and grasses. Tornadoes May 9th and 21st covered considerable areas but did little damage to crops. Soil and weather conditions in May were very favorable for germination and growth of corn.

Heavy rains the first week in June caused considerable damage to corn by erosion and overflow, from Webster and Hamilton Counties southeast to Poweshiek and Johnson Counties. Replanting from this cause was probably not greater than usual for the State as a whole, but because of the large acreage of spring plowed sod, the cut worm damage and consequent replanting from this cause was unusual. This replanted corn was about all that was caught by the early frosts, September 18-21. The soft corn which is 4 per cent of the crop, is a fairly good indication of the extent of this replanting. Seventeen counties, mostly in the southwest, reported no appreciable amount of soft corn, while the northeast counties reported considerable.

Reports from many hundred crop correspondents on July 1, showed the average condition of corn to be 105 per cent, which has been exceeded but once in 29 years. A hot period about the middle of June with record high temperatures on the 16th was believed to have prematurely ripened oats in the southwestern one-fourth of the State. Such a period is not considered good for any small grain, yet all small grains finally shows yields above normal. Smut affected spring wheat seriously.

Harvest came on about a week earlier than normal and continued through July under conditions unusually favorable for labor and curing shocked grain, except in the northeast and north-central counties where heavy rains caused delay and damaged the shocked grain.

During July a marked deficiency in rainfall began to be felt over the south-central and southwest counties, causing the pastures to fail and upland corn to begin firing. The average condition of corn on August 1 was 101 per cent. In the next eight days, record breaking high temperatures with drouth, damaged corn throughout the southwest one-third of the State, amounting to a disaster in some of the southwest counties. In Adams County where the heat and drouth were greatest, the average yield of corn is only 7 bushels per acre, approaching the record low yield of 5 bushels per acre in Page county in the historic drouth of 1894. Roughly it may be said that Iowa's corn crop was damaged $5,000,000 per day during this eight-day period. Though it is difficult to assign a damage value to particular days, it seems probable that the damage on three days August 4-6, at the climax, was approximately $10,000,000 per day. To save the crop, much of it was cut for fodder and silage. Live stock was put on winter feed in the damaged area as early as the latter days of July and many hogs and cattle were shipped to regions where feed was more plentiful. In the northern and eastern portions, the corn crop was bountiful, the largest average yield being 51 bushels per acre in Cedar County.

Profiting from the anxiety and tremendous effort in obtaining good seed corn last spring, farmers have this fall saved a large supply, in most instances enough for two years, and it is believed that the quality is excellent, though no extensive tests have yet been made and much will depend on the care used in storing this seed.

Sweet corn yielded well, outside of the drouthy section, but suffered unusual damage from the corn ear worm, *Heliothus obsoleta,* for which, as yet, entomologists have discovered no remedy within the bounds of economy.

A determined campaign to increase the acreage seeded to winter wheat this fall has brought about large results in the sections of the State where the crop is usually grown, but not much extension to new territory. It is impossible at this time to state what the acreage is, but it is probably somewhat less than the million-acre goal set. The crop is entering the winter in unusually good condition, 95 per cent of the acreage having made good to rank growth and become well established. Four per cent has germinated but made little showing above ground, and only one per cent has apparently not germinated.

With all of its vicissitudes the crop season of 1918 finally resulted in the usual large cash balance for the State.

Bulletin No. 1, April 9, 1918—

The first half of the past winter was severely and continuously cold, with a good snow covering. March and the latter part of February were mild. Frost was out of the ground early in March, not having penetrated as deeply as usual during the winter. At the close of March the season was about two weeks earlier than normal; farm work was well advanced; soil in fine condition; seeding of spring wheat and oats completed in the south and progressing rapidly in the north. Most of the 1917 corn crop remaining unhusked in the fields was husked during March though a little was left to be done in the early days of April. Wheat wintered well, especially in the southeast, where moisture was abundant. Some wheat that failed to germinate last fall, germinated in March. During the past two weeks winter wheat has suffered from drouth in all but the southeast section where the rainfall has generally exceeded one inch. In considerable areas over the southwestern and west-central portions, the rainfall has been very deficient and winter wheat has been plowed up or cross drilled with early spring wheat. In Adams and Jasper counties the water supply is failing.

A remarkably large acreage of spring wheat has been seeded. In many counties nearly every farm has a small piece of wheat seeded through patriotic motives and regarded as experimental in those sections where it has not been hitherto raised. A much larger acreage would have been devoted to wheat if cars had been available to ship in the seed. Oats seeding is nearing completion in the north, about the usual area having been seeded. Barley seeding is well under way.

Meadows and pastures generally wintered well, but are badly needing rain.

Dry soil has retarded or prevented germination of small grain in all but the southeast portion. Good rains occurred in nearly all sections Friday night and Saturday. More than the usual amount of gardening and potato planting has been done.

Plowing for corn is well advanced. Seed corn testing and seed distribution have been proceeding rapidly during the last few weeks.

Live stock is in good condition, except in some sections where roughage has been short. The mild, dry weather has been especially favorable for the pig and lamb crop.

Bulletin No. 2, April 16, 1918—

Cold, dry, sunshiny weather prevailed the fore part of the week with freezing temperatures or frosts in all portions of the state each night till the night of the 13th-14th. Several stations reported temperatures below 20, the lowest being 14 at Audubon. The average daily deficiency in temperature for the State was about 2 degrees. Ice one-half inch thick was reported on the 8th, 9th and 10th.

The cold weather was due to an area of high barometric pressure that persisted over the Great Lakes. The outflowing winds from this were as usual east to northeast over Iowa. Generally such winds are accompanied by considerable cloudiness, but in this instance sunshine prevailed.

The temperature began to moderate Sunday, the 14th, due to the approach of a large general storm that formed in Nevada Saturday. Showers were quite general over the state Monday and Monday night.

Spring seeded grains have not in general germinated except where sufficient moisture came up from the subsoil; germination is, therefore, uneven. Where sufficient moisture is present spring wheat and pastures are beginning to look green. In some of the northern tier of counties, the moisture in the soil derived from the heavy snows of March has brought pastures along sufficiently for grazing. Winter wheat with all other vegetation has ben nearly at a standstill, the rain of the 6th serving only to keep it alive. Barley seeding is well davanced in the central portion and progressing rapidly in the north. A largely increased acreage of onions is being seeded, particularly in the northeastern and Mississippi river counties. Corn acreage will be reduced in some counties through scarcity of reliable seed, small grains, mostly wheat, having taken its place.

The dry weather has been specially favorable for manure hauling, plowing, disking and harrowing for corn; also for soft corn in cribs. Farm labor and horse power have been utilized to good advantage during the favorable weather and are ample so far in most sections.

Bulletin No. 3, April 23, 1918—

The week opened warm but soon became abnormally cold, the average daily deficiency in temperature being about 6 degrees. Copious precipitation occurred in the southern tier of counties except Lee, and northward over the Central District. Rains of agricultural importance occurred in nearly all other sections of the state except some of the northwestern and west-central counties where more moisture is badly needed, particularly in Buena Vista and Woodbury counties. A striking feature was the snowstorm of the 19th-21st, which covered the southern and eastern portions of the state, amounting to 20 inches in Decatur and Ringgold counties, and 6 inches in the central portion of the state. Such a storm is unprecedented so late in the season, though a snowstorm of only slightly less intensity occurred in south central Iowa on April 7, 1917. In Adams, Union, Wayne and Jasper counties a drouth of several months was effectually broken.

The warmth and moisture of the early part of the week germinated most of the oats, the remaining ungerminated wheat in the north, and some of the barley. The freezing and snow are not believed to have caused any damage other than a delay of several days.

Pears and plums are in full bloom in the southern counties. Plowing for corn is well advanced and a few warm days would start the planters in the southern counties. Unless unusually favorable conditions of warmth, sunshine and moisture follow soon the hay crop will be short. The seriousness of the seed corn situation has become more apparent in some of the counties where testing has been thorough.

Bulletin No. 4, April 30, 1918—

Cold and generally cloudy weather prevailed during the past week, the average daily deficiency in temperature being about 8 degrees. Freezing temperature occurred in all but the southern counties and the highest temperatures were generally about 65 degrees. The rainfall was well distributed and generally sufficient, though about two-thirds of the normal. The heaviest rains were in the northern and northwestern portions of the State where the need was greatest.

All vegetation has been nearly at a standstill. Oats and wheat seeded more than a month ago are scarcely beginning to show green over much of the State and some of the later seeding is just sprouting. Though the season was considered two weeks early at the beginning of April, it is scarcely up to normal at the close. However, small grain that has germinated has rooted well, winter wheat has begun to stool in the southeastern countise, and normally warm and moist weather would bring these crops along vigorously.

Few rainy days and cool weather have favored field work which has progressed more rapidly than in any spring in recent years. The labor supply, which is known to be much shorter than usual, has been used to remarkably good advantage. About 85 per cent of the corn ground is ready for planting and only warm, sunny days are needed to start the planters briskly. In fact, a little planting has been done in the southern counties and a few scattered reports of planting have been received from as far north as Greene and Pocahontas counties. However, the scarcity and low vitality of seed corn will keep cautious farmers from taking the risk of planting till the ground is warm.

Pastures and hay lands have suffered seriously from the cold, dry spring.

Fruit trees are in full bloom in the south and beginning to bloom in the central portions of the state.

Bulletin No. 5, May 7, 1918—

Freezing temperatures prevailed on May 1st, ice one-eighth inch thick being reported in the southeastern counties. This was followed by a decided change to warmer with maximum temperatures above 90 degrees in the northern half of the state on the 3d and generally on the 4th, the highest reported being 95 at Forest City on the 3d. The change was like going from the 20th of April to the middle of July in four days.

The warmth caused a marked improvement in all vegetation except where too dry. Strong southwest winds and low humidity caused considerable injury to pastures and meadows in many sections. In Jackson and Madison counties winter wheat has been killed by the drouth and will be plowed up and planted to corn. Good rains fell Monday, the 6th, in south and east portions of the state.

Oats, spring wheat, rye and barley show general improvement, the fields being green and plants about three inches high.

Corn planting is progressing rapidly in the south and beginning in the north with soil in excellent condition generally.

Gardens are badly needing rain; potatoes planted six weeks ago are just beginning to come up in the central portion of the state.

Apples, plums and cherries are in full bloom in the central and southern portions of the state and beginning to bloom in the north. The fruit prospect is considered good. No material damage seems to have resulted from the freezing on May 1st.

Bulletin No. 6, May 14, 1918—

Heavy rains occurred in the northeastern part of the state, but as the soil was dry and receptive, it absorbed most of the rain. Over much of the central and southwestern districts the deficiency in rainfall has become serious. Temperatures in the nineties prevailed in the north and west portions on the 8th and 9th followed by cooler with frost and ice in many sections on the morning of the 13th and snow and sleet in the central district. The temperature averaged about normal. Shifting gales on the 9th caused minor damage to buildings and trees and serious drying effects in the southwest portion. Tornadoes in the late afternoon of the 9th caused serious damage, several deaths and many injuries in Bremer, Chickasaw, Winneshiek, Hamilton and Scott counties. The property loss will total nearly $1,000,000. The damage to crops was small. Hail was reported in many northern and eastern counties but the damage is not believed to have been great.

Corn planting is 75 per cent completed in the southern counties where the early planting is up, showing a good stand and cultivation has begun in a few localities. In some of the northeastern and north-central counties planting is just beginning, while in the northwest it is well advanced. Small grain, pastures and meadows are doing well in all but the central and southwest districts where rain is badly needed. Much winter wheat is being plowed up in Taylor county. The first crop of alfalfa and probably all hay will be short in these districts.

Bulletin No. 7, May 21, 1918—

Rain was abundant in the north and east portions of the state but very deficient in the southwest. Temperatures were high, averaging about 7 degrees above normal. Frosts on the mornings of the 13th and 14th damaged fruit in some northern counties and nipped the early potatoes. Sunshine averaged nearly 20 per cent above normal. Hail in many sections on the 19th did but little damage. High, drying, southerly winds on the 15th and 16th damaged pastures and meadows in the western half of the state, which was generally dry upon that date. Oats were also damaged on the sandy, north-central uplands where sand or dust storms occurred. In some localities in the southwest, cattle have been taken from the brown, bare pastures and are being fed expensive hay. The hay crop will be short in all but the eastern counties and almost an entire failure in the southwest.

Small grains have made excellent progress in the east and north and are in fair condition in the southwest, except winter wheat.

Corn planting is nearly finished in the south and two-thirds done in the north. Considerable replanting has been necessary, due to poor seed and the ravages of cut and wire worms, particularly on sod. In general, ideal soil and weather conditions, combined with the skill of the Iowa farmer, have made the best of the weak seed corn and a good crop is now in prospect.

Telegraphic reports Tuesday morning show good rains in the southwest portion of the state, but these will be too late to save the hay crop.

Bulletin No. 8, May 28, 1918—

Copious to excessive rains occurred in all but the extreme northeast counties. No section is lacking moisture. Most of this has been soaked up and retained by the soil as shown by the tile drains which are not running full. In some of the central and southeast counties the excesses eroded the hillsides and flooded the lowlands. In Jasper and Poweshiek counties between five and six inches of rain fell and considerable live stock, mostly sheep, were drowned. The area damaged is comparatively small.

On Tuesday afternoon, May 21st, a series of tornadoes occurred in Crawford, Carroll, Greene, Boone, Webster and Hardin counties, causing much damage to property, many injuries and several deaths. Hail damaged crops slightly in many sections and seriously in some southwestern counties.

Temperatures were about normal in the north and west and about 4 degrees above normal in the southeast. Sunshine was slightly deficient.

The drouth is broken in the west and southwest counties, but too late for the hay crop; pastures are improving rapidly. Small grains are all making good progress and becoming too rank in some of the southeastern counties. Winter wheat is heading in the southeast and shooting in the central counties. Cutworm damage to corn, particularly on sod, is unusually prevalent in all sections and will necessitate much replanting; otherwise the stand is remarkably good as a result of diligent seed testing, and unusually favorable soil and weather conditions. Cultivation and late planting have been delayed by rain; weeds are getting a good start in some sections.

Strawberries promise a good crop and are beginning to ripen in the southeast.

Bulletin No. 9, June 4, 1918—

Ideal growing weather prevailed. The rainfall averaged about an inch from Linn county northward and eastward, while in the upper Des Moines watershed and in some counties in the west central and south central districts it averaged more than 4 inches. In some sections rain fell practically every day. Temperatures averaged about 4 degrees above normal. Sunshine was deficient in the northern districts, but averaged about normal. The season is about 10 days earlier than at this time last year.

Crops in general are in unusually good condition, though cultivation of corn has been delayed by wet weather. Field work was possible on but one or two days and in some sections not at all; so the weeds are getting a good start. Replanting fields taken by cutworms and washed out or drowned out by heavy rains has also been delayed. A small percentage of first planting remains to be done. A few days of dry, warm weather will permit cultivation and put this crop in excellent condition. It is reported to be a foot high in Scott county.

Spring wheat, oats and rye are beginning to head at normal height in the southern districts. Hay and pastures show marked improvement, but the rains came too late to make a full hay crop in the central and southwestern districts. Clover is in full bloom in the southwest, but short. The first cutting of alfalfa has begun and home-grown strawberries are on the market in the southern districts.

Bulletin No. 10, June 11, 1918—

Excessive rains towards the close of last week and continuing in some sections till the 6th, caused much damage by overflow and erosion, particularly in central tiers of counties, extending from the Missouri nearly to the Mississippi; also in some of the south central counties. In the Skunk, Iowa and Cedar valleys, many bridges were washed out, the damage running into the hundreds of thousands of dollars. The Des Moines and Raccoon also overflowed to some extent. The crop damage in about fifteen central counties is estimated at about 5 per cent. Toward the close of the week, the weather became more favorable, cultivation of corn was pushed rapidly on the uplands, and preparations were made on the lowlands for replanting to corn or seeding to millet and buckwheat. Hail is reported from many localities, but the total area damaged is relatively small.

The abundant moisture, followed by warmth and sunshine, caused all vegetation to make excellent growth. A few more days of warm, dry weather will permit the weeds to be cleared from the corn. Corn prospects are generally very good and far ahead of this time last year; oats in some cases are too rank; winter wheat, rye and oats are heading in all sections of the state, and spring wheat north to the central districts; winter wheat shows improvement in the southwest. The first crop of alfalfa is being cut in the southern and west central districts and clover in the south. Strawberries are all gone in the southwest and being picked rapidly in the central districts, the crop being generally good.

Bulletin No. 11, June 18, 1918—

Hot, dry, sunshiny weather prevailed. A wide belt extending from the northwestern to the southeastern portions of the state had scarcely a trace of rain. The southwest one-fourth of the state had the most rain and there it was generally less than one-half inch. Temperatures averaged about 7 degrees above normal and sunshine about 25 per cent above normal.

Most all crops, particularly corn, made wonderful progress. Early corn is knee high in the north and will be ready to lay by at the close of the week in some south central counties. The hot, dry weather has been excellent for weed killing, which has progressed rapidly, and fields are now mostly clean, having been cultivated generally twice and in the south three times. The crop is about a week ahead of the average and two or three weeks ahead of last year. Small grains are heading well in most sections, though short. The hot weather has checked the tendency to rankness in some sections. Wheat rust is reported in the southwestern counties. Harvest will be about a week earlier than normal. Winter wheat harvest will begin in a day or two in the extreme southeast counties, in the central counties by the 24th, and in the northeast by July 1st. Spring wheat harvest will begin in the southern counties about July 3d and in the north about July 20th. Oats, south, July 1st; north, July 15th. Rye, south, June 23d; north, July 5th. Barley, south, July 1st; north, July 15th.

First crop alfalfa has been harvested in unusually fine condition; yield fair to good. Clover cutting in progress; yield good in southeast; poor in west.

Potatoes have made a good growth, but the heat has caused tip burn in some sections and rain would be highly beneficial. The crop has been laid by in some southern counties.

Strawberries passed rapidly with poor to good yield; raspberries are very promising; cherries will be a fair crop.

Bulletin No. 12, June 25, 1918—

Cooler weather with less than normal sunshine checked the premature ripening of small grain and permitted the heads to fill nicely in nearly all sections. Winter wheat harvest has begun in the southern tier of counties, and will extend over all but the northern one-third of the state during the coming week. Rust has damaged this crop somewhat in the west-central and southwest counties. Spring wheat harvest will begin in the extreme southwest July 1st and reach the central counties about July 9th. Estimated harvest dates of other crops remain about the same as last week.

Infrequent showers were favorable for cultivation of corn which proceeded rapidly in all but a few counties in the north-central district, the fields now being generally clean. The prospects for this crop are now excellent except relatively small replanted areas which are just coming up in some localities.

In the north-central sugar beet district, the fields of this crop are generally weedy.

Gardens, potatoes and pastures have suffered from drouth and heat in some localities in the western half of the state, but good rains Monday will relieve these conditions somewhat. Home-raised new potatoes are being used considerably in the southern half of the state.

The cherry crop is generally disappointing. Raspberries are beginning to ripen and the prospects are generally good.

Bulletin No. 13, July 2, 1918—

In general crop prospects are unusually good. Cool weather prevailed with temperatures averaging about 3 degrees below normal. Rains were ample and well distributed, except the southwest district where there is a marked deficiency. Corn cultivation and haying were delayed by frequent rains in the eastern half of the state. Corn is being laid by in nearly all sections with the crop in excellent condition. Considerable clover hay was spoiled in curing. The crop is heavy in the eastern and light in the western counties.

The cool, cloudy, moist weather has been favorable for small grains which are filling well and promise large yields, except early oats which in some places are heading short and were prematurely ripened by the hot weather about three weeks ago. Harvest has been beneficially delayed to later dates than at first estimated. Winter wheat harvest has advanced slowly northward during the week to the third tier of counties, will become general in the middle of the state by the 9th, and will reach the north line about the 15th. Oats harvest now extends from Fremont to Henry counties and will reach the northern part of the state about the 12th-15th. Spring wheat harvest is beginning in the extreme south this week and will reach the middle of the state agout the 16th. Rye harvest is completed in the south, is beginning in the middle and will reach the north about the 10th. Barley harvest is beginning in the south, will extend from Taylor to Jackson counties by the 9th and reach the north by the 16th.

A severe hailstorm June 27th, damaged crops about 60 per cent in about eight townships in southeastern Polk, northern Marion and southern Jasper counties. Damaging hail occurred in several other counties on this date.

Grasshoppers are damaging all crops, particularly pastures in the southwestern counties. Some pastures are brown and bare and stock is being fed.

Bulletin No. 14, July 9, 1918—

The week opened hot with temperatures above 90, but turned cool and cloudy. The deficiency in temperature averaged about 2 degrees. Frequent and heavy rains in the northern and eastern portions of the State delayed harvesting and haying and caused oats to lodge badly in some sections. Scab and rust attacked spring wheat in some counties. Drouth and grasshoppers continue to damage all crops in the southwest and west central counties. Corn is far advanced, being mostly laid by and beginning to tassel in all sections. Harvest is in full progress in the central portion of the state and beginning in the north. Threshing has begun in Fremont county. Indications are that the yield of spring wheat, winter wheat and barley will be good; that of oats, fair, but considerably below last year.

Bulletin No. 15, July 16, 1918—

Cool, dry weather prevailed till near the close of the week, when good rains occurred in the northern and light showers in the southern portions of the state. Temperatures averaged about 6 degrees below normal in the eastern and about 1 degree below in the westren portions. Sunshine was much above normal, except the extreme western and northern counties. The drouth in the southwestern part of the state is becoming serious.

Conditions were ideal for using labor and horse power to the best possible advantage in haying and harvesting. Though put to a supreme test, farmers have been able to cope with the difficult labor situation. In some cases business men have gone out from the towns to help in the late afternoon and evening. Winter wheat and early oats harvest is completed in the southern districts and beginning along the north line. Uneven germination due to lack of moisture last fall has caused winter wheat to ripen unevenly. Spring wheat harvest is in full progress in the central and western districts and will begin in the north central and northeast districts about the 23d-25th. Rye harvest is completed except in the north central district. Barley harvest is completed in the southern and central districts and is in full progress in the northern districts. Oats threshing began in Van Buren county on the 12th, yielding 48 bushels per acre; and in Pottawattamie county on the 13th, yielding 41 bushels. In Davis county winter wheat yielded 31 bushels. Second crop alfalfa is ready to cut. Much other hay of excellent quality has been harvested.

Corn made good progress except in the southwest district, is tasseling rapidly in most sections, and silking in some. Unless a good soaking rain comes soon the crop will be seriously damaged in the southwest district where the leaves rolled badly during the past week with comparatively moderate temperatures.

Pastures are generally short in the southwestern third of the state and are brown and bare in the extreme southwest counties, where on many farms stock has been fed for the past three weeks and much live stock is being sold to avoid using expensive feed.

Bulletin No. 16, July 23, 1918—

Ideal weather for harvesting, haying, threshing and most crops, prevailed in nearly all parts of the state. The week opened cool and cloudy, but became sunny and hot with maximum temperatures above 90 Friday to Monday afternoons. The highest reported was 100 at Boone and Clarinda. Temperatures averaged slightly above normal. Infrequent rains have favored harvesting and haying, yet the moisture has been generally sufficient. The drouth in the extreme southwest counties was broken by good rains on the 17th. More rain is badly needed in Cass and Adams counties and eastward over Warren and Lucas counties, where corn rolled considerably toward the close of the week. Corn is generally in good condition, tasseling and silking in the central and north and earing well in the south. Grasshoppers have injured corn and late oats in Sac county and southward to Adams county; and farmers are combating them with dozers and poison.

Harvest is finished in the south except some late fields, and threshing is in full progress. Yields are generally good and quality excellent. In Scott county one field of wheat yielded 55 bushels per acre. While oats yields are good, no phenomenally heavy yields like last year have been reported. Scab has seriously affected spring wheat in many sections and "barley stripe" is common. Very little black stem rust is reported.

The hot weather at intervals through the season has reduced the early potato crop to considerably below normal; blight is prevalent. Gardens are needing rain. Homegrown tomatoes are on the market in the central portion of the state.

Bulletin No. 17, July 30, 1918—

Hot weather prevailed with maximum temperatures above 90 degrees nearly every day. The highest reported was 105 dgrees at Clarinda on the 28th. Temperatures averaged about 5 degrees above normal. Rainfall was heavy to excessive in the northern districts and very deficient in the central, south central and southwest districts. High winds and hail occurred in some northern counties.

The rains delayed harvesting in the north and together with the high wind caused oats to lodge so that many fields can be cut only one way. Considerable of the late oats and spring wheat remains to be cut in the northeastern district, where in places the fields are too wet for the binders. The yield of spring wheat in Blackhawk county has been reduced 50 per cent by rust. Threshing is progressing in all but the northeast district. Yields are generally good.

Corn has made good progress except in the southwest one-fourth of the state, where extreme heat and serious drouth have caused it to fire on thin uplands. In other sections corn is earing well and promises an unusually large crop. Strong winds blew the corn down badly in the northern districts, but it is generally straightening up. In general the crop is two or three weeks ahead of last year. Early sweet corn is being used in the north.

Pastures have failed in the southwest and live stock has been put on winter feed. Potatoes and garden truck in this section have been damaged by drouth. Home grown tomatoes are on the market in nearly all sections.

Bulletin No. 18, August 6, 1918—

Abnormally cool weather weather with a minimum temperature of 46 in Delaware county on July 31st was followed by intense heat in the south half of the state. At Pella the temperature range was 65 degrees, from 47 on July 31st to 112 on August 4th. The highest temperature was reported as 113 at Clarinda on the 4th, equaling the highest ever recorded in the state. In the southwest one-fourth of the state, high temperature records of 40 to 46 years were broken. Rainfall of agricultural importance was confined to about 15 counties in the northeastern part of the state. The southwest part, which has been deficient in rainfall for several weeks, suffered seriously from three days of intense heat and the strong southerly winds of Monday, August 5th. Corn has been injured 50 per cent or more in many southwest counties, and, unless rain comes soon, it will be nearly a total loss. In the northern and eastern portions, prospects for corn were never better. The crop has advanced rapidly, roasting ears are reported in all sections and the earliest has begun to dent.

Threshing is 50 to 75 per cent completed in the southern half of the state and in full progress in the north. Yields are generally good to excellent and quality good. Wheat is being hauled to market direct from the machines. Blight and aphis are seriously affecting late potatoes which will not yield as well as has been indicated. Garden truck is suffering for rain except in the northeast district and is practically a failure in the southwest.

Pasture and new seedings of clover and other grasses have failed generally in the south and west. Plowing, in preparation for a large acreage of winter wheat, has begun in many sections.

Bulletin No. 19, August 13, 1918—

Hot weather continued in nearly all parts of the state except on the 8th and 9th when cooler weather prevailed. The mean temperature averaged about 8 degrees above normal. Most stations had temperatures of 100 or higher on one or more days. Good rains occurred in the northwest portion early in the week, but drouth continued in the south half of the state till somewhat relieved by rains Saturday evening and Sunday; more rain is badly needed. Hot winds again prevailed on Monday, the 12th. The zone of damage to corn spread northward and has a rather sharply defined northern boundary extending through the northern portions of the counties from Harrison on the west to Scott on the east. The damage south of this line approximates 25,000,000 bushels valued at $40,000,000 and will increase daily as long as the hot winds and drouth continue. Many fields look as though they had suffered from a killing frost. Efforts are being made to save the remnant of the crop by cutting and shocking, filling silos or turning in livestock. In the north half of the state prospects are excellent.

Pastures, gardens, potatoes and new seedings of timothy and clover are a failure in the drouth-stricken area and stock water has failed in many places.

Shock threshing and stacking progressed rapidly except in the north-central and northwest districts where delayed by heavy rains early in the week, which caused molding in the shock where the grain was weedy. Fall plowing is progressing where there is sufficient moisture.

Bulletin No. 20, August 20, 1918—

Rain occurred in all portions of the state, but amounted to less than an inch in the extreme western and south central counties, and in Sac, Calhoun, Humboldt, Webster, Boone and Blackhawk counties. Heavy local rains occurred Friday and Saturday, and in the northeastern one-fourth of the state the rains were excessive and damaging in many places. The largest weekly amount was 6.31 inches at Nora Springs. Temperatures were near 100 degrees in all sections Tuesday afternoon and in the south half on Friday, though on the latter day the maximum varied from 71 at Decorah in the northeast to 102 at Clarinda in the southwest.

Wet weather delayed threshing. Shocked grain was damaged in the northeast. Only a small percentage of threshing remains to be done in the south half of the state. Reports of yields continue good, particularly in the north.

Corn made good progress where not injured beyond recovery by the heat and drouth of the preceding two weeks. The rains are helping it to fill; the earliest is denting; and the crop is practically assured. In Johnson county the 90-day varieties are being snapped for hogs. In many south central and southwest counties, upland corn is a failure; bottom land corn will yield only about 25 bushels; and silos are being filled early to make the most of a bad situation. A large number of silos have been built this year.

The rains have softened the ground in most sections so that plowing is progressing and a large acreage of fall wheat and rye is indicated. Tomatoes, cucumbers, sweet corn, potatoes and pastures were greatly benefited by the rains, though potatoes will be a light crop in the southern half of the state. Apples are dropping badly.

Bulletin No. 21, August 27, 1918—

Though temperatures averaged about 6 degrees above normal with maxima above 90 on two or three days, no such extreme, scorching temperatures occurred as during the preceding three weeks. Nearly all portions of the state had showers and some portions heavy local rains. In the north central counties the amounts were between one and two inches, while portions of Mahaska, Marion, Monroe and Wapello counties had from two or over three inches, accompanied by severe electrical storms and considerable damage by lightning.

Thrashing, which has been delayed by heavy rains in the northern part of the state for more than two weeks, was resumed towards the close of this week. Sprouting and molding of shocked grain is reported from many counties. Fall plowing and preparation for seeding an increased acreage of winter wheat has made good progress where moisture was sufficient.

Pastures, potatoes, gardens and the supply of stock water have improved materially in the south central counties. The rains have been inadequate in most southwest counties.

Corn has made excellent progress over the northern and eastern counties where some of it is already safe from injury from frost. Some of the replanted lowland corn in the central and north central counties will make only fodder and silage. While the corn in the south central and southwest counties shows improvement in appearance, nothing can restore the damage done to the commercial crop. Cutting for fodder and silage is under way about a month earlier than usual in the damaged area.

Bulletin No. 22, September 3, 1918—

Heavy rains occurred in the southeast and portions of the east central and south central districts also in Hardin county. Over most of the western and northern districts the rain was very light or nil. Temperatures about 85 in the north and slightly above 90 in the south occurred on the afternoon of August 27th, after which the weather was generally cool, especially at night. The lowest temperature reported was 39 at Washta on the morning of the 31st. Traces of frost were reported in the south central counties on the mornings of the 30th and 31st.

Corn is advancing rapidly to maturity. More than half of the crop is already safe from frost in the northwest counties. By September 20th, 83 per cent of the crop will be safe in the northwest and 62 per cent in the east central districts, averaging 75 per cent for the state. By September 30th, 95 per cent will be safe in the northwest and 80 per cent in the east central, with 88 per cent for the state. By October 10th, which is about the average date of the first killing frost, 95 per cent will be safe. Though the east central counties are the latest, they are not far from normal. Silo filling is progressing in the south and has been finished in a few localities.

Shock thrashing is practically finished, except in the northern districts, where delayed by the wet weather early in August. Stacks are generally in the "sweat" and not fit to thrash. Cutting of wild hay and third-crop alfalfa is in progress. Potatoes will be less than a normal crop, and are very poor in the southwest. Pastures are improving as a result of recent rains and more moderate temperatures. A large acreage of winter grain is assured in the region of havy rain, where the soil is working up in excellent condition.

Bulletin No. 23, September 10, 1918—

Rains, mostly light, occurred in all portions of the state. Much of that reported by correspondents fell at the close of last week. More than one inch occurred in some of the south central counties. Temperatures were generally low, averaging about six degrees below normal. The lowest reported was 35 at Washta on the 6th. Light frosts were reported in Floyd county on the morning of the 5th. The highest temperatures were generally between 80 and 87 on Sunday the 8th. Sunshine was generally deficient.

Corn made satisfactory progress in spite of the cool weather. Silo filling is about completed in the southwest where corn was prematurely ripened and is beginning in the north and east. Much is being cut for fodder. Considerable seed corn is being saved.

Plowing for winter wheat has progressed rapidly, though dry soil has made it difficult in the central and western counties. Seeding has begun in Adams, Mills, Lee and Scott counties. Much will be sown in corn ground in the southwest, from which it has been possible to remove the silage and fodder earlier than usual. Potatoes are a poor crop generally. Blight has been quite prevalent, and rot has attacked them in the northern counties where the soil has been excessively wet . Sorghum grinding has begun in Keokuk county. An excellent third crop of alfalfa and second crop of clover is being secured in the southeast counties. Pastures are in unusually good condition in the eastern one-third of the state, but stock is being fed from the cornfields in the southwest. Considerable shock thrashing remains to be done in the north.

Note: Because of a shortage of funds, due to increased cost of printing, it will be necessary to suspend the publication of this bulletin for the season. Correspondents are requested to continue reporting till October 7th. Postal card summaries will be issued if conditions warrant.

Bulletin No. 24, September 17, 1918—

Generous rains occurred in the northeast one-third of the state, the heaviest, nearly three inches, being reported in Floyd county. Cool, cloudy weather prevailed, the deficiency in temperature averaging about 5 degrees and ranging from 1 degree in the southwest to 7 degrees in the northeast. Frost occurred in the northwest counties on the 12th and 16th. The lowest temperature reported was 32 degrees at Primghar.

Two weeks of abnormally cool weather and deficient sunshine have retarded the maturing of corn in most sections. Probably not more than 60 per cent of the crop is now safe from frost. Cutting of fodder and silage is progressing rapidly. Plowing is under way in all but the southwest and west central sections where the soil is so dry that only tractors can handle it and then it can not be reduced to a seed bed for winter wheat. Seeding of winter wheat has made good progress where moisture is sufficient and some is already up in Lee county.

Shock thrashing is about finished, but considerable unthrashed grain remains in stacks. Sorghum factories, though working to capacity, are unable to take care of the crop. The second crop of clover harvest has been delayed in the northeast by the heavy rains. In much of the eastern part of the state, pastures are green like spring, while in the southwest and west-central districts stock has subsistd on corn fodder the past six weeks.

Bulletin No. 25, September 24, 1918—

Abnormally low temperatures with an average daily deficiency of about 11 degrees, were accompanied by killing frost in the northwest counties on the 18th, and throughout the state on the 19th, 20th and 21st, except a distance of two or three counties west of the Mississippi River, where the frosts were light. The lowest temperature reported was 22 degrees on the 20th at Washta, Cherokee county. Ice formed in a number of places.

Dry weather favored the maturing of corn which proceeded rapidly so that 86 per cent is now safe from frost. Of the remaining 14 per cent, less than half or about 5 per cent of the total crop was seriously damaged by frost and this will be readily absorbed by feeding on the farms, so that the commercial crop of corn is practically uninfluenced by frost. With normally warm and dry weather during the next two weeks the damage as compared with last year would be negligible.

Potatoes and sugar beets were not appreciably damaged by the frost. Sweet corn was damaged slightly, but not enough to stop the canneries. Tomatoes, sweet potatoes and minor garden crops were generally killed.

The dry weather has seriously retarded the seeding and germination of winter wheat in the central and western portions of the State. Where moisture is sufficient, wheat is up and growing nicely.

IOWA CROP REPORT, JUNE 1, 1918.

Following is a summary showing the condition of crops on June 1, as compared with the average of past years on that date:

Corn, 98 per cent; oats, 101; spring wheat, 102; winter wheat, 91; barley, 101; rye, 97; flax, 98; potatoes, 101; tame hay, 86; wild hay, 91; pastures, 90; alfalfa, 95; sweet corn, 98; pop corn, 98 per cent.

The secretary of the State Horticultural Society reports the condition of fruit as follows:

Apples, 67 per cent; pears, 35; American plums, 58; Domestica plums, 40; Japanese plums, 36; cherries, 50; peaches, less than 5; grapes, 59; red raspberries, 62; black raspberries, 64; blackberries, 67; currants, 72; gooseberries, 75, and strawberries, 73 per cent of a full crop. The average of all fruits is 54 per cent, or 16 per cent below the average for the month of May, and 2 per cent below the estimate of June 1, last year, and 1½ per cent above the ten-year average.

IOWA CROP REPORT, JULY 1, 1918.

Reports received July 1, from township correspondents of the Iowa Weather and Crop Service, show the following results as to the acreage and average condition of staple farm crops:

Corn.—The acreage planted this year, after making allowances for the acreage loss by floods and washings, is 10,337,700 or 33,000 less than last year, as shown by Township Assessors. The condition was 105 per cent, or 18 per cent better than on July 1, 1917. The stand is remarkably good, considering the low vitality of the seed. This is probably due to the untiring efforts of the County Agricultural Agents and farmers in seed testing, together with unusually favorable weather and soil conditions at planting time. The crop is far advanced.

Oats.—Area seeded, 5,426,500 or 16,500 acres more than last year. Condition, 97 per cent, is 5 per cent less than last year.

Spring Wheat.—Area seeded, 580,400 acres, or an increase of 415,600 acres over last year. Condition, 101 per cent, or 2 per cent better than last year. The increase in acreage is a patriotic response of the farmers to the appeal of the State Council of Defense made through the County Agents.

Winter Wheat.—Acreage to be harvested, 197,270, or 46,172 acres more than in 1917. Condition, 92 per cent or 12 per cent better than last year.

Barley.—Acreage seeded, 340,100, increase 34,700 acres. Condition, 100 per cent, 2 per cent better than last year.

Rye.—Acreage, 50,040 which is 1636 more than last year. Condition, 96, or 2 per cent better than last year.

Flax.—Acreage, 8,687 as compared with 8,384 in 1917. Condition, 95 or 1 per cent better than last year.

Potatoes.—Acreage, 97,210 a decrease of about 3,000 acres. Condition, 97 per cent, or 9 per cent lower than last year.

Hay.—Acreage of tame and wild hay, 2,994,200, or 291,900 acres less than in 1917. Condition, 88 per cent, or 5 per cent better than last year.

Alfalfa.—Acreage, 116,040, increase, 870 acres.

Pastures.—Acreage, 9,080,400; decrease, 415,900 acres. Condition, 92 per cent, or 3 per cent below last year.

Fruit.—The Secretary of the State Horticultural Society reports the condition of fruit on July 1, as follows: "Summer apples, 32 per cent; fall apples, 36 per cent; winter apples, 38 per cent; cherries, 38 per cent; pears, 14 per cent; American plums, 37 per cent; Domestica plums, 18 per cent; Japanese plums, 9 per cent; grapes, 49 per cent; red raspberries, 60 per cent; black raspberries, 68 per cent; blackberries, 70 per cent; currants, 65 per cent; gooseberries, 70 per cent of a full crop. The average for all fruits is 48 per cent, or 9 per cent below the last 5-year average. The indications are that there will be about half as many apples and plums as last year, and about the same quantity of grapes and raspberries as in 1917."

IOWA CROP REPORT, AUGUST 1, 1918.

The condition of crops on August 1, as compared with the average of past years on that date, was as follows: Corn, 101 per cent; pastures, 89; potatoes, 86; and flax 97. Last year on August 1, the condition of corn was 92 per cent; pastures, 90; potatoes, 96; and flax, 96.

Preliminary reports show the average yield of winter wheat to be about 21 bushels per acre; spring wheat, 18; early oats, 42; late oats, 43; barley, 32; rye, 19; tame hay, 1.2 tons; and wild hay also 1.2 tons. Threshing reports received up to August 1 were mostly from the south half of the State. If final returns maintain these averages, the State will produce about 4,143,000 bushels of winter wheat; spring wheat, 9,447,000; oats, 234,876,000; barley, 10,883,000; rye, 951,000 bushels; and 3,593,000 tons of hay.

The Secretary of the State Horticultural Society reports the condition of fruit on August 1 as follows: Summer apples, 26 per cent; fall apples, 27; winter apples, 29; pears, 18; American plums, 23; domestic plums, 13; Japanese plums, 5; grapes, 52 per cent of a full crop. The percentage of crop on the eight leading varieties of commercial apples is as follows: Duchess, 26 per cent; Wealthy, 24; Grimes Golden, 32; Jonathan, 30; Winesap, 19; Ben Davis, 25; Northwestern Greening, 29; and Willow Twig, 31. There will be about half as many apples and plums, and the same quantity of grapes as were harvested last year, should normal conditions prevail until crops are gathered for market or storage.

IOWA CROP REPORT, SEPTEMBER 1, 1918.

Following is a summary showing the condition of crops on September 1. as compared with the average of past years on that date: Corn, 90 per cent; potatoes, 78; flax, 95; pastures, 85; On September 1, 1917, the conditions were: Corn, 84; potatoes, 95; flax, 94; and pastures, 80 per cent.

Hot winds and drouth seriously damaged corn in the southwest one-third of the State during the first half of August, so that the average condition September 1, was 11 per cent lower than on August 1. The total production will be about 350,000,000 bushels, or nearly 17,000,000 bushels above the ten-year average.

Preliminary reports indicate the average yield of winter wheat to be 21 bushels per acre; spring wheat, 19; oats, 43; barley, 31; rye, 18; and timothy seed, 4.6. If these estimates are maintained by final reports, the State will produce about 4,143,000 bushels of winter wheat, 11,028,000 of spring wheat; 237,640,000 of oats; 10,679,000 of barley, and 900,000 bushels of rye. The area of timothy cut for seed was 73 per cent of last year's acreage. Eighty per cent of the threshing had been finished on September 1, which is about 10 per cent above the normal.

FINAL CROP REPORT OF THE STATE, 1918.

Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service showing the average yield per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1918. This report does not include or take into consideration live stock, poultry or dairy products:

Corn.—The estimated acreage was 10,337,700, or 33,000 acres less than in 1917; average yield, 34.5 bushels per acre; total yield, 356,677,000 bushels; average price, $1.23 per bushel; total value, $438,712,710. Only 4 per cent of the crop was reported to be soft or immature and 91 per cent had been husked on December 1st. The crop this year is being referred to as "disappointing," yet the yield is only 2.0 bushels per acre below the average of the last 10 years and the total crop, 356,677,000 bushels has been exceeded but four times in 29 years. The quality is excellent and the feeding value of the 1918 crop is much greater than that of the 1917 crop bushel for bushel.

Oats.—The estimated area harvested was 5,426,500 acres, or about 16,500 acres more than in 1917. Average yield, 40.2 bushels; total yield, 217,592,500 bushels; average price, 64 cents; total value, $140,043,200.

Spring Wheat.—Area harvested, 580,400 acres, or about 415,600 acres more than in 1917; average yield 18.2 bushels per acre; total yield, 10,584,600 bushels; price per bushel, $1.99; total value, $21,063,354.

Winter Wheat.—Area harvested, 197,270 acres; average yield per acre, 19.9 bushels; total yield 3,920,810; average price, $2.02 per bushel; total value, $7,920,036.

Barley.—Area harvested, 340,100 acres; average yield per acre, 31.3 bushels; total yield, 10,649,200 bushels; average price, 89c per bushel; total value, $9,477,788.

Rye.—Area harvested, 50,040 acres; average yield, 18.1 bushels; total yield, 905,850; price per bushel, $1.48; total value, $1,340,658.

Flax Seed.—Average yield, 10.1 bushels; total yield, 87,450 bushels; total value, at $3.26 per bushel, $285,087.

Timothy Seed.—Area harvested, 156,750 acres; average yield, 4.3 bushels; total yield, 673,025; total value, at $4.27 per bushel, $2,873,817.

Clover Seed.—Area harvested, 23,480 acres; average yield, 1.5 bushels; total value, at $19.74 per bushel, $695,243.

Potatoes.—Area harvested, 97,210 acres; average yield, 76.1 bushels; total yield, 7,391,750 bushels; average price, $1.32; total value, $9,761,070.

Hay (Tame.)—Average yield, 1.3 tons per acre; total yield, 3,357,100 tons; average price, $19.57 per ton; total value, $65,697,448.

Hay (Wild).—Average yield, 1.2 tons; total yield, 594,580 tons; average price, $16.00; total value, $9,513,280.

Alfalfa.—Area harvested, 116,040 acres; average yield, 2.8 tons; total yiled, 328,110 tons; average price, $23.93 per ton; total value; $7,875,602.

TABULATED CROP SUMMARY.

Crop	Acres	Average Yield	Average Price	Total Yield	Total Value
Corn	10,337,700	34.5 Bu.	$ 1.23	356,677,000	$ 438,712,710
Oats	5,426,500	40.1 Bu.	.64	217,592,500	140,043,200
Spring Wheat	580,400	18.2 Bu.	1.99	10,584,600	21,063,354
Winter Wheat	197,270	19.9 Bu.	2.02	3,920,810	7,920,036
Barley	340,100	31.3 Bu.	.89	10,649,200	9,477,788
Rye	50,040	18.1 Bu.	1.48	905,850	1,340,658
Flax Seed	8,687	10.1 Bu.	3.26	87,450	285,087
Timothy Seed	156,750	4.3 Bu.	4.27	673,025	2,873,817
Clover Seed	23,480	1.5 Bu.	19.74	35,220	695,243
Potatoes	97,210	76.1 Bu.	1.32	7,394,750	9,761,070
Hay (Tame)	2,502,620	1.3 tons	19.57	3,357,100	65,697,448
Hay (Wild)	491,590	1.2 tons	16.00	594,580	9,513,280
Alfalfa	116,040	2.8 tons	23.93	329,110	7,875,602
Pasture and Grazing (Estim'd)					90,000,000
Ensilage (Estimated)					20,000,000
Sweet Corn (Estimated)		3.0 tons	15.00		6,000,000
Pop Corn (Estimated)	18,805	19.5 Bu.	4.16	366,700	1,525,472
Buckwheat (Estimated)	16,000	15.3 Bu.	1.70	244,800	416,160
Fruit Crop (Estimated)					6,000,000
Garden Truck (Estimated)					8,500,000
Sugar Beets for Manufacture (Estimated)	7,000				
(Estimated)		10.0 tons	9.00	70,000	630,000
Miscellaneous (Estimated)					11,500,000
Total					$ 859,830,915
Total value of soil products for 1917 was					$ 822,061,291

IOWA CROPS, 1918, ESTIMATED NUMBER OF ACRES BY COUNTIES.

Counties	Corn	Oats	Spring Wheat	Winter Wheat	Barley	Rye	Flax	Potatoes	Tame Hay	Wild Hay	Alfalfa	Pastures
Adair	120,000	39,300	3,000	1,000	4,200	40	----------	820	25,200	1,560	70	117,700
Adams	82,100	26,900	1,900	1,600	1,200	210	----------	480	18,500	1,440	490	88,000
Allamakee	45,100	37,100	8,700	1,000	7,500	450	20	1,090	48,800	1,020	50	160,000
Appanoose	50,100	21,400	1,000	1,700	100	320	----------	290	30,600	720	50	120,000
Audubon	91,600	37,500	5,000	900	8,500	30	----------	780	25,000	1,980	1,040	72,600
Benton	147,300	85,800	2,000	200	8,000	900	----------	1,100	31,800	2,000	70	96,600
Black Hawk	102,900	64,100	1,000	400	4,300	1,900	5	1,610	24,600	7,500	30	87,500
Boone	131,900	70,400	2,000	700	1,000	50	----------	520	16,600	5,900	220	69,300
Bremer	60,700	47,800	2,000	200	1,300	480	----------	1,320	15,000	19,500	30	69,800
Buchanan	104,900	63,200	3,500	200	2,800	910	20	1,000	27,600	10,530	10	108,800
Buena Vista	135,700	88,000	2,000	150	1,000	40	30	1,050	18,800	7,520	760	65,300
Butler	95,500	75,000	3,600	50	1,100	1,090	----------	2,340	26,800	8,960	10	71,500
Calhoun	138,500	101,400	1,000	50	900	30	30	650	16,500	3,610	270	50,000
Carroll	120,300	66,800	8,600	500	2,300	20	15	1,660	22,700	6,480	450	115,200
Cass	129,200	39,600	7,100	3,000	10,000	230	----------	1,120	24,400	1,240	550	104,100
Cedar	110,100	38,800	1,700	200	13,000	560	----------	1,230	39,300	140	70	115,800
Cerro Gordo	98,200	73,900	3,000	50	2,100	100	90	1,290	28,700	9,970	120	74,300
Cherokee	124,900	78,400	1,200	50	2,400	40	----------	950	22,700	7,900	2,290	78,800
Chickasaw	59,800	69,000	6,200	----------	2,500	430	105	910	31,500	11,230	10	82,500
Clarke	64,200	25,700	2,000	2,300	200	110	----------	290	21,600	30	30	97,400
Clay	116,500	78,000	1,100	130	2,700	260	405	680	20,300	13,720	650	74,800
Clayton	74,000	63,000	11,900	2,500	12,000	500	----------	1,050	6,100	1,260	50	157,000
Clinton	110,800	45,600	9,300	8,000	10,000	1,690	----------	930	48,200	1,590	100	131,400
Crawford	150,100	66,000	29,000	3,400	4,500	160	----------	1,420	40,900	5,240	4,130	110,800
Dallas	139,500	60,400	1,200	12,000	1,200	80	----------	530	16,400	2,390	350	79,600
Davis	59,700	22,500	1,500	2,500	100	660	----------	590	43,200	----------	40	133,400
Decatur	72,000	25,600	1,000	3,500	100	720	----------	300	25,900	130	140	103,300
Delaware	87,100	59,600	2,300	90	8,800	1,540	----------	1,120	33,300	5,270	60	112,900
Des Moines	65,700	27,200	1,200	5,000	300	2,110	----------	720	18,300	70	240	79,700
Dickinson	65,600	45,600	4,700	100	1,400	20	600	580	12,800	12,050	210	53,400
Dubuque	67,300	51,500	9,200	500	4,400	300	----------	2,110	52,800	600	90	144,600
Emmet	71,800	54,900	1,500	50	1,400	130	440	490	16,000	8,350	110	49,000
Fayette	88,000	73,000	7,600	200	8,700	390	20	1,230	53,600	10,200	40	141,500
Floyd	89,300	70,200	3,000	50	2,100	720	115	1,250	31,900	4,190	20	68,000
Franklin	113,600	84,300	2,000	50	2,500	120	10	1,520	38,400	8,460	100	40,500
Fremont	130,100	13,100	2,000	7,200	300	340	----------	590	5,800	2,230	7,650	52,600
Greene	136,700	70,000	2,000	900	700	20	----------	570	19,700	5,030	110	72,600
Grundy	106,300	71,800	1,200	100	3,000	40	----------	1,630	23,200	5,520	30	70,000
Guthrie	110,400	46,400	3,900	1,000	1,500	20	5	630	21,700	3,320	280	100,000
Hamilton	129,400	88,700	1,000	400	1,000	20	10	720	21,300	6,100	150	69,200
Hancock	108,300	88,900	5,800	50	3,000	310	460	1,050	23,900	21,800	110	78,800
Hardin	109,000	71,500	3,300	50	2,500	100	----------	940	26,200	5,360	110	72,200

IOWA CROPS, 1918, ESTIMATED NUMBER OF ACRES BY COUNTIES—Continued.

Counties	Corn	Oats	Spring Wheat	Winter Wheat	Barley	Rye	Flax	Potatoes	Tame Hay	Wild Hay	Alfalfa	Pastures
Harrison	153,300	30,300	30,000	4,300	2,600	250	----------	950	6,200	6,530	11,600	91,400
Henry	77,000	32,800	1,500	2,200	200	1,160	----------	300	25,800	10	90	92,800
Howard	54,500	56,300	2,200	200	4,900	310	295	930	35,500	11,930	10	83,400
Humboldt	95,800	66,000	1,700	150	1,800	30	75	500	16,900	5,700	210	41,000
Ida	99,600	51,700	6,700	----------	3,500	30	12	640	21,000	1,320	1,600	111,700
Iowa	96,500	49,100	3,300	800	2,000	1,600	----------	1,140	23,300	400	20	89,800
Jackson	58,500	29,100	3,300	1,600	2,600	760	----------	1,280	52,900	750	60	22,400
Jasper	159,900	65,200	12,000	2,000	800	150	15	800	29,400	500	100	115,500
Jefferson	68,200	30,900	1,600	2,000	200	710	----------	390	28,400	----------	20	93,200
Johnson	106,700	51,500	2,400	1,000	2,100	1,320	----------	1,030	38,810	550	60	113,900
Jones	72,700	37,200	5,400	500	6,400	650	----------	790	44,800	220	20	122,800
Keokuk	111,100	40,300	10,500	1,400	300	410	----------	770	35,700	40	40	120,700
Kossuth	184,400	142,600	3,700	100	3,700	100	1,560	1,800	30,900	29,340	250	114,600
Lee	59,900	24,500	1,600	2,700	500	7,630	----------	1,220	28,600	----------	220	128,200
Linn	118,200	59,200	8,000	200	3,300	670	----------	1,460	40,100	2,060	140	112,300
Louisa	65,800	25,500	1,000	7,800	----------	2,280	----------	420	15,700	150	50	70,600
Lucas	62,400	25,300	1,600	2,400	100	470	----------	440	23,200	110	60	97,800
Lyon	129,600	102,600	6,400	100	12,000	20	20	1,650	11,700	9,440	2,620	159,000
Madison	105,800	35,100	2,100	4,400	2,800	130	----------	1,040	19,500	1,460	160	122,700
Mahaska	122,900	47,500	4,300	3,300	700	420	----------	1,670	25,000	280	120	111,300
Marion	99,800	36,500	5,500	6,500	900	200	----------	440	18,800	420	110	130,700
Marshall	127,200	67,400	4,100	700	1,000	50	----------	810	26,900	440	80	85,800
Mills	108,700	18,800	7,900	3,200	1,100	160	----------	910	7,100	4,150	6,870	58,000
Mitchell	67,500	77,500	6,500	50	3,200	50	730	2,440	30,200	3,300	10	66,000
Monona	139,000	28,500	29,000	25,000	2,000	90	----------	1,250	6,800	11,800	11,260	90,200
Monroe	53,200	14,800	2,200	3,000	100	470	40	270	25,400	20	20	103,900
Montgomery	100,000	28,100	6,600	4,900	800	350	----------	640	15,300	750	2,990	77,900
Muscatine	78,400	33,500	3,600	1,600	7,600	2,540	----------	1,410	20,300	610	220	78,800
O'Brien	125,500	81,000	1,600	50	7,300	20	10	1,160	22,400	6,770	1,690	71,500
Osceola	83,700	58,600	1,500	----------	2,600	60	195	870	12,300	5,650	130	36,200
Page	124,500	25,500	2,000	12,000	400	440	----------	540	20,700	1,180	3,090	100,400
Palo Alto	100,800	68,100	3,600	50	600	300	420	630	13,400	18,000	190	58,300
Plymouth	190,800	95,700	65,000	500	5,000	300	5	1,520	20,310	22,580	10,460	103,500
Pocahontas	132,400	101,400	2,000	50	1,000	270	115	840	17,900	8,800	190	53,500
Polk	111,400	46,700	6,000	5,200	200	550	----------	1,100	17,200	3,000	370	70,800
Pottawattamie	219,900	64,800	12,000	1,900	12,000	510	----------	2,090	24,500	6,600	12,660	127,300
Poweshiek	123,100	50,900	3,700	400	2,300	100	----------	780	23,200	100	60	91,900
Ringgold	87,800	31,300	1,100	1,700	200	350	----------	270	30,400	160	30	112,500
Sac	129,100	81,400	2,600	50	2,900	10	20	740	23,700	4,030	450	57,900
Scott	75,700	28,400	5,600	1,500	29,000	2,270	----------	4,160	28,500	1,780	610	81,100
Shelby	128,000	47,600	14,000	300	10,000	80	----------	1,110	29,800	3,820	3,570	94,000
Sioux	176,500	97,200	21,000	500	15,000	50	----------	1,250	16,000	14,020	4,470	77,400

Story	142,000	67,900	2,000	300	100	30	5	190	21,500	2,730	90	60,100
Tama	134,300	77,300	15,000	300	10,000	220	----------	1,240	30,900	1,100	60	116,800
Taylor	102,100	33,000	1,500	3,000	300	340	----------	560	21,000	740	600	103,900
Union	73,800	27,000	1,400	1,200	600	60	----------	740	19,700	710	70	90,500
Van Buren	56,200	23,400	1,200	2,000	100	1,130	----------	160	29,300	30	190	113,800
Wapello	65,100	23,900	1,500	3,500	300	430	----------	970	24,800	10	170	96,000
Warren	101,000	32,600	3,300	10,000	600	410	----------	540	24,800	640	230	118,700
Washington	104,900	43,700	1,200	1,200	400	150	10	520	13,400	10	60	105,800
Wayne	90,600	32,900	1,200	1,000	100	140	----------	30	30,700	50	20	100,000
Webster	156,800	118,900	4,500	500	1,200	40	30	1,010	21,300	8,810	420	75,900
Winnebago	67,000	50,700	10,000	----------	4,100	----------	810	1,340	18,800	20,080	30	52,400
Winneshiek	77,200	67,000	15,000	600	12,000	330	190	1,310	54,000	4,570	20	138,300
Woodbury	200,500	72,000	25,000	5,200	2,900	70	15	1,550	17,000	8,970	15,530	103,100
Worth	53,400	60,200	8,000	50	3,500	140	1,520	740	29,600	15,420	80	61,800
Wright	112,800	81,700	1,000	100	1,600	40	215	710	24,700	6,840	100	65,100
	10,337,700	5,426,500	580,400	197,270	340,100	50,040	8,687	97,210	2,502,620	491,590	116,040	9,080,400

TABULATED CROP SUMMARY FOR THE YEAR 1918.—PART I

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels
Adair	14	1,680,000	28	1,100,500	14	42,000	15	15,000	26	109,200
Adams	7	575,000	27	726,500	14	26,600	15	24,000	20	24,000
Allamakee	46	2,075,000	41	1,521,100	21	182,700	16	16,000	27	202,500
Appanoose	28	1,403,000	41	877,400	20	20,000	20	34,000	25	2,500
Audubon	29	2,656,000	32	1,200,000	16	80,000	18	16,200	30	255,000
Benton	43	6,334,000	44	3,775,000	16	32,000	18	3,600	34	272,000
Black Hawk	38	3,910,000	44	2,820,400	18	18,000	22	8,800	35	150,500
Boone	35	4,616,000	43	3,027,200	16	32,000	18	12,600	34	34,000
Bremer	38	2,307,000	39	1,864,000	18	36,000	18	3,600	32	41,600
Buchanan	38	3,986,000	42	2,654,400	17	59,500	20	4,000	38	106,400
Buena Vista	43	5,835,000	47	4,136,000	22	44,000	26	3,900	33	33,000
Butler	38	3,629,000	35	2,625,000	12	43,200	16	800	24	26,400
Calhoun	40	5,540,000	45	4,563,000	22	22,000	18	900	40	36,000
Carroll	38	4,571,000	42	2,805,600	19	163,400	26	13,000	36	82,800
Cass	12	1,550,000	28	1,108,800	14	99,400	16	48,000	20	200,000
Cedar	51	5,615,000	50	1,940,000	18	30,600	23	4,600	35	455,000
Cerro Gordo	39	3,830,000	40	2,956,000	16	48,000	15	750	25	52,500
Cherokee	44	5,496,000	47	3,684,800	23	1,100	22	1,100	37	88,800
Chickasaw	30	1,794,000	45	3,105,000	16	99,200	----	----------	30	75,000
Clarke	24	1,541,000	34	873,800	17	34,000	16	36,800	35	7,000
Clay	42	4,893,000	47	3,666,000	17	18,700	20	2,600	34	91,800
Clayton	43	3,182,000	38	2,394,000	24	285,600	19	47,500	37	444,000
Clinton	44	4,875,000	43	1,960,800	18	167,400	19	152,000	33	330,000
Crawford	28	4,203,000	40	2,640,000	21	609,000	26	88,400	32	144,000
Dallas	29	4,046,000	46	2,778,400	18	21,600	21	252,000	35	42,000
Davis	34	2,030,000	46	1,035,000	19	28,500	21	52,500	32	3,200
Decatur	18	1,296,000	36	921,600	17	17,000	18	63,000	15	1,500
Delaware	30	2,613,000	42	2,503,200	15	34,500	20	1,800	25	220,000
Des Moines	50	3,285,000	44	1,196,800	21	25,200	24	120,000	28	8,400
Dickinson	37	2,427,000	41	1,869,600	15	90,500	20	2,000	33	46,200
Dubuque	42	2,827,000	43	2,214,500	21	193,200	20	10,000	38	167,200
Emmet	41	2,944,000	45	2,470,500	16	24,000	20	1,000	35	49,000
Fayette	40	3,520,000	47	3,431,000	20	152,000	25	5,000	33	287,000
Floyd	38	3,393,000	36	2,527,200	16	48,000	19	950	32	67,200
Franklin	35	3,976,000	42	3,540,600	17	34,000	20	1,000	26	65,000
Fremont	21	2,733,000	25	327,500	13	26,000	20	144,000	20	6,000
Greene	37	5,058,000	37	2,590,000	14	28,000	14	12,600	35	24,500
Grundy	36	3,827,000	37	2,656,600	13	15,600	16	1,600	32	96,000
Guthrie	26	2,870,000	31	1,438,400	16	62,400	20	20,000	25	37,500
Hamilton	34	4,400,000	40	3,548,000	17	17,000	14	5,600	29	29,000
Hancock	36	3,899,000	44	3,905,600	17	98,600	12	600	34	102,000
Hardin	37	4,033,000	42	3,003,000	16	52,800	16	800	30	75,000
Harrison	18	2,759,000	34	1,030,200	16	480,000	18	77,400	16	41,600
Henry	45	3,465,000	47	1,541,600	20	30,000	25	55,000	34	6,800
Howard	23	1,254,000	25	1,407,500	15	33,000	21	4,200	19	93,100
Humboldt	42	4,024,000	47	3,102,000	19	32,300	19	2,850	35	63,000
Ida	35	3,486,000	43	2,223,100	21	140,700	24	960	30	105,000
Iowa	33	3,184,000	37	1,816,700	18	59,400	20	16,000	29	58,000
Jackson	48	2,808,000	42	1,222,200	18	59,400	18	28,800	29	75,400
Jasper	41	6,556,000	42	2,738,400	20	240,000	21	42,000	29	23,200
Jefferson	42	2,864,000	45	1,390,500	18	28,800	19	38,000	36	7,200
Johnson	48	5,122,000	46	2,369,000	19	45,600	24	24,000	37	56,700
Jones	45	3,272,000	40	1,488,000	15	81,000	18	9,000	30	193,000
Keokuk	43	4,777,000	41	1,652,000	20	210,000	25	35,000	32	9,600
Kossuth	39	7,192,000	42	5,989,200	18	66,600	12	1,200	35	129,500
Lee	41	2,446,000	39	955,500	21	33,600	23	62,100	27	13,500
Linn	42	4,964,000	52	3,078,400	19	152,000	17	3,400	35	115,500
Louisa	45	2,961,000	45	1,147,500	15	15,000	24	187,200	----	----------
Lucas	30	1,872,000	39	986,700	18	28,800	24	57,600	32	3,200
Lyon	42	5,443,000	43	44,100	20	128,000	20	2,000	33	396,000
Madison	16	1,693,000	36	1,263,600	14	29,400	19	83,600	26	42,800
Mahaska	36	3,424,000	47	2,232,500	17	73,100	20	66,000	35	24,500
Marion	31	3,094,000	42	1,533,000	18	99,000	18	117,000	31	27,900
Marshall	44	5,597,000	42	2,830,800	17	69,700	19	13,300	38	38,000
Mills	18	1,957,000	24	451,200	13	102,700	14	44,800	20	22,000
Mitchell	37	473,000	49	3,797,500	19	123,500	20	1,000	31	99,200
Monona	30	4,170,000	39	1,111,500	19	551,000	21	525,000	32	64,000
Monroe	29	1,543,000	43	636,400	20	44,000	21	63,000	30	3,000
Montgomery	17	1,700,000	30	8,400	15	99,000	16	78,400	30	24,000
Muscatine	43	3,371,000	40	1,340,000	18	64,800	25	40,000	26	197,600
O'Brien	45	5,648,000	43	3,483,000	19	30,400	21	1,000	34	248,200

TABULATED CROP SUMMARY FOR THE YEAR 1918—PART I—Continued.

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley	
	Bushels per acre	Total Bushels	Bushels per acre	Bushels per acre	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons
Osceola	41	3,432,000	4	2,754,200	17	15,500	----	----------	3	96,200
Page	17	2,116,000	2	714,000	13	26,000	18	216,000	1	6,400
Palo Alto	45	4,536,000	4	2,860,200	11	39,600	15	800	3	21,000
Plymouth	37	7,050,000	35	3,349,500	18	1,170,000	22	11,000	3	155,000
Pocahontas	40	5,296,000	44	4,461,600	16	32,000	22	1,100	35	35,000
Polk	37	4,122,000	47	2,194,900	20	120,000	20	104,000	30	6,000
Pottawattamie	21	4,618,000	34	2,203,200	16	192,000	18	34,200	29	348,000
Poweshiek	39	4,801,000	42	2,137,800	16	59,200	19	7,600	38	87,400
Ringgold	17	1,493,000	35	1,095,500	15	16,500	18	30,600	20	4,000
Sac	38	4,906,000	52	4,232,800	22	57,200	22	1,100	38	110,200
Scott	50	3,785,000	48	1,363,200	21	117,600	24	36,000	35	1,015,000
Shelby	21	2,688,000	32	1,523,000	22	308,000	15	4,500	32	320,000
Sioux	42	7,413,000	44	4,276,800	19	399,000	19	9,500	33	495,000
Story	36	5,112,000	41	2,783,900	16	32,000	21	6,300	40	4,000
Tama	45	6,044,000	44	3,401,200	19	285,000	19	5,700	33	330,000
Taylor	18	1,838,000	28	924,000	15	22,500	16	48,000	22	6,600
Union	21	1,550,000	35	94,500	15	21,000	14	16,800	18	10,800
Van Buren	39	2,192,000	39	522,600	18	21,600	22	44,000	20	2,000
Wapello	32	2,083,000	41	979,900	22	33,000	23	80,500	35	10,500
Warren	27	2,727,000	40	1,304,000	17	56,100	20	200,000	39	23,400
Washington	45	4,720,000	40	1,748,000	20	24,000	19	12,800	33	13,200
Wayne	24	2,174,000	39	1,283,100	16	19,200	18	18,000	15	1,500
Webster	38	5,958,000	45	5,350,500	21	94,500	22	11,000	36	43,200
Winnebago	46	3,082,000	44	2,230,800	15	150,000	16	300	33	135,300
Winneshiek	40	3,088,000	40	2,680,000	21	315,000	21	12,600	30	360,000
Woodbury	37	7,418,000	38	2,736,000	18	450,000	18	93,600	25	72,500
Worth	35	1,869,000	39	2,347,800	22	176,000	18	900	32	112,000
Wright	37	4,174,000	39	3,186,300	18	18,000	15	1,500	33	52,800
	34.5	356,677,000	40.1	217,592,500	18.2	10,584,600	19.9	3,920,810	31.3	10,649,200

TABULATED CROP SUMMARY FOR THE YEAR 1918.—PART II

Counties	Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild		Alfalfa	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons	Tons per acre	Total Tons
Adair	10	400	----	------	17	13,900	0.5	12,600	0.5	780	1.5	100
Adams	18	3,780	----	------	42	20,200	0.4	7,400	0.5	720	1.8	880
Allamakee	18	8,100	12	240	97	105,700	2.0	97,600	1.5	1,530	2.0	100
Appanoose	20	6,400	----	------	70	20,3 0	1.0	30,600	1.2	860	1.2	60
Audubon	22	660	----	------	73	56,900	0.8	20,000	1.1	2,180	2.0	2,080
Benton	20	18,000	----	------	70	77,000	1.6	50,900	1.5	3,000	3.0	210
Black Hawk	12	22,800	12	60	75	120,800	1.2	29,500	1.0	7,500	3.0	90
Boone	25	1,200	----	------	53	27,600	1.0	16,600	0.8	4,720	2.2	480
Bremer	19	9,100	----	------	92	121,400	1.7	18,000	1.1	21,450	3.0	90
Buchanan	19	17,290	12	240	116	116,000	1.3	35,900	1.2	12,640	3.0	30
Buena Vista	20	800	12	360	62	65,100	1.2	22,600	1.3	9,780	2.8	730
Butler	15	15,000	----	------	60	140,400	1.2	32,200	1.1	9,860	3.0	30
Calhoun	20	600	12	360	47	30,600	1.3	21,400	1.0	3,600	2.5	680
Carroll	20	400	12	180	75	124,500	1.2	27,200	1.2	7,780	4.0	1,800
Cass	9	2,070	----	------	20	22,400	0.5	12,200	0.5	620	1.5	820
Cedar	33	18,480	----	------	78	95,900	1.8	70,700	1.8	250	4.0	280
Cerro Gordo	31	3,100	12	1,080	109	140,600	1.6	45,900	1.2	11,970	5.0	600
Cherokee	20	800	----	------	108	102,600	1.4	31,800	1.0	7,900	3.0	6,900
Chickasaw	20	8,600	12	1,260	115	104,600	1.8	56,700	1.5	16,840	3.0	30
Clarke	17	1,870	----	------	90	26,100	0.8	17,300	1.0	30	1.5	40
Clay	----	--------	10	4,050	65	44,200	1.5	30,400	1.5	20,580	3.5	2,280
Clayton	21	10,500	----	------	72	75,600	1.5	9,200	1.5	1,890	3.0	150
Clinton	19	32,110	----	------	64	59,500	1.4	67,500	1.5	2,380	3.6	360
Crawford	23	3,680	----	------	61	86,600	1.5	61,400	1.2	6,290	2.8	11,560
Dallas	20	1,600	----	------	41	21,700	1.3	21,300	1.3	3,110	2.7	940
Davis	12	7,920	----	------	79	46,600	1.3	56,20	----	--------	1.2	50
Decatur	12	8,640	----	------	42	12,600	0.7	18,100	0.7	90	1.5	210
Delaware	20	30,800	----	------	50	56,000	0.8	26,600	1.5	7,900	3.0	180
Des Moines	21	44,300	----	------	100	72,000	1.4	25,600	1.4	100	3.0	720
Dickinson	16	320	9	5,400	95	55,100	1.6	20,50	1.1	13,260	3.0	630
Dubuque	19	5,700	----	------	85	179,400	1.3	68,60	1.4	8,400	3.	270
Emmet	23	2,990	13	5,700	82	40,200	1.3	20,80	1.2	10,02	3.0	320
Fayette	22	8,580	5	160	92	113,200	1.8	96,50	1.2	12,240	3.0	120
Floyd	17	12,240	5	580	103	128,800	1.7	54,200	0.9	3,770	3.0	60
Franklin	15	1,800	12	120	89	135,300	1.5	57,600	1.1	9,310	3.0	300
Fremont	15	5,100	----	------	32	18,900	1.2	7,000	1.5	3,340	3.2	24,480
Greene	30	600	----	------	51	29,100	1.0	19,700	0.8	4,020	2.5	2,750
Grundy	22	880	----	------	51	83,100	1.5	34,800	1.0	5,520	3.0	90
Guthrie	18	360	12	60	36	22,700	1.0	21,700	1.1	3,650	2.8	780
Hamilton	22	440	11	110	58	41,800	1.0	21,300	1.0	6,100	3.0	450
Hancock	25	7,750	11	5,060	125	131,200	1.3	31,100	1.2	26,160	3.0	330
Hardin	15	1,500	----	------	55	51,700	1.4	36,700	1.0	5,360	5.0	550
Harrison	35	8,750	----	------	53	50,400	1.0	6,200	1.6	10,450	2.8	32,480
Henry	18	20,880	----	------	89	26,700	2.0	51,600	2.0	20	3.0	270
Howard	16	4,960	8	2,360	70	65,100	1.5	53,200	1.0	11,930	3.0	30
Humboldt	25	750	12	900	95	47,500	1.1	18,600	0.9	5,130	2.2	460
Ida	20	600	12	140	63	40,300	1.4	29,400	1.1	1,450	2.7	4,320
Iowa	20	32,000	----	------	52	59,300	1.6	37,300	0.5	200	2.0	60
Jackson	19	14,440	----	------	150	192,000	1.5	79,400	1.5	1,120	2.5	150
Jasper	45	6,750	12	180	64	51,200	1.2	35,300	1.5	7,500	4.0	400
Jefferson	14	9,940	----	------	101	39,400	1.9	54,000	----	--------	3.2	60
Johnson	20	26,400	----	------	76	78,300	1.6	62,100	1.0	550	3.0	180
Jones	10	6,500	----	------	85	67,150	2.0	89,600	2.0	440	3.2	60
Keokuk	19	7,800	----	------	78	60,100	1.7	60,700	1.7	70	3.2	130
Kossuth	25	2,500	9	14,040	92	165,600	1.4	43,300	1.0	29,340	3.0	750
Lee	18	137,340	----	------	84	102,500	1.4	40,000	----	--------	2.7	620
Linn	23	15,410	----	------	62	90,500	1.3	52,100	1.2	2,470	3.0	420
Louisa	17	38,760	----	------	112	47,000	1.5	23,600	1.4	210	5.0	250
Lucas	18	8,460	----	------	52	22,900	1.1	25,500	1.0	110	3.0	180
Lyon	10	200	14	280	107	176,600	1.4	16,400	1.3	12,270	2.7	7,070
Madison	18	2,340	----	------	42	43,700	0.8	15,600	0.8	1,170	2.2	350
Mahaska	16	6,720	----	------	82	136,900	1.4	35,000	1.5	420	3.0	360
Marion	23	4,600	----	------	64	28,200	1.0	18,800	1.	420	3.0	330
Marshall	25	1,350	----	------	78	63,200	1.4	37,700	1.	570	3.0	240
Mills	21	3,360	----	------	5	45,500	1.2	8,500	1.	4,150	2.5	17,180
Mitchell	20	1,000	16	11,680	15	370,900	1.8	54,400	1	3,630	3.0	30
Monona	25	2,250	----	------	6	77,500	1.2	8,20	1.	15,34	3.0	33,780
Monroe	18	8,460	12	480	7	18,900	0.8	20,300	1.	20	3.0	60
Montgomery	18	6,300	----	------	4	26,900	0.7	10,700	1.	820	2.3	6,880
Muscatine	1	33,020	----	------	5	77,600	1.5	30,400	1.	670	4.2	920
O'Brien	10	200	10	100	9	104,400	1.5	33,000	1.	8,120	4.2	7,100

TABULATED CROP SUMMARY FOR THE YEAR 1918—PART II—Continued.

Counties	Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild		Alfalfa	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons	Tons per acre	Total Tons
Osceola	10	600	10	1,950	130	113,100	1.7	20,900	1.3	9,600	5.0	650
Page	18	7,920	----	------	26	14,000	0.7	14,500	0.9	1,060	1.8	5,560
Palo Alto	24	7,200	7	2,940	62	39,100	1.0	13,400	1.0	18,000	3.2	610
Plymouth	20	6,000	----	------	86	130,700	1.5	30,500	1.4	31,610	3.0	31,380
Pocahontas	25	6,750	12	1,380	57	47,900	1.1	19,700	0.9	7,920	2.0	380
Polk	20	11,000	----	------	58	63,800	1.2	20,600	1.0	3,000	2.6	960
Pottawattamie	15	7,650	----	------	51	106,600	1.1	27,000	1.1	7,260	2.4	30,380
Poweshiek	20	2,000	----	------	60	46,800	1.7	39,400	1.2	120	2.0	120
Ringgold	14	4,900	----	------	55	14,800	0.6	18,200	1.2	190	1.2	40
Sac	20	200	----	------	54	40,000	1.3	30,800	1.5	6,040	2.7	1,220
Scott	20	45,400	----	------	86	357,800	1.8	51,300	1.3	2,310	3.6	2,200
Shelby	28	2,240	----	------	40	44,400	0.5	14,900	1.0	3,820	2.5	8,920
Sioux	----	--------	----	------	120	150,000	1.7	27,200	1.4	19,630	2.8	12,520
Story	28	840	12	60	87	16,500	1.1	23,600	0.7	1,910	2.6	230
Tama	25	5,500	----	------	60	74,400	1.4	43,300	1.4	1,540	3.0	180
Taylor	10	3,400	----	------	27	15,100	1.0	21,000	.05	370	1.0	600
Union	27	1,020	----	------	39	28,900	0.7	13,800	1.0	710	1.6	120
Van Buren	16	18,080	----	------	66	10,600	1.2	35,200	1.5	40	2.2	420
Wapello	23	9,890	----	------	54	52,400	0.9	22,300	1.5	20	2.2	370
Warren	20	8,200	----	------	43	23,200	1.1	27,300	2.5	1,000	3.0	690
Washington	18	2,700	10	120	90	46,800	1.5	20,100	1.7	20	3.1	190
Wayne	18	2,520	----	------	57	1,700	0.9	27,600	1.0	50	2.5	50
Webster	25	1,000	14	420	49	49,500	1.4	29,800	1.3	11,450	1.5	630
Winnebago	25	500	12	9,720	118	158,100	1.7	32,000	1.3	26,100	4.0	120
Winneshiek	23	7,590	12	2,280	121	158,500	1.9	102,600	1.5	8,860	2.0	40
Woodbury	19	1,330	12	180	73	11,300	1.7	28,900	1.1	10,870	3.3	51,250
Worth	10	1,400	7	10,640	138	102,100	1.5	44,400	1.0	15,420	3.0	240
Wright	18	720	12	2,580	88	62,500	1.7	42,000	1.4	9,580	3.1	310
	18.1	905,850	10.1	87,450	76.1	7,394,750	1.3	3,357,100	1.2	594,580	2.8	329,110

PART XI

Farm Statistics for the Year Ending December 31, 1918. Collected by Township Assessors, Reported by County Auditors and Tabulated by the Iowa Department of Agriculture.

There is presented, herewith, six tables covering farm and live stock statistics collected through the township assessors and reported to the Department of Agriculture by the County Auditors.

The Department, at considerable expense, employed the help necessary to verify and correct the township assessor's books and the tabulations of the county auditors.

TABLE NO. 1.

Total number, average size and total acreage of farms, total acreage occupied by farm buildings, public highways and feed lots, acreage in pasture, crops not otherwise enumerated and land not utilized for any purpose. Number tractors and silos on farms, and number tons silage put up. Total number bushels apples harvested, monthly wage paid farm help, summer and winter months, by counties, for the year 1918.

Counties	Number of farms	Average size of farms	Total acreage of farms	Total number of acres occupied by farm buildings, public highways and feed lots	Acreage in pasture	Number bushels of apples harvested	Acreage in crops not otherwise enumerated	Acreage in waste land not utilized for any purpose	Number of tractors on farms	Number of silos on farms	Number of tons of silage put up	Av. mo. wage paid farm help summer months	Av. mo. wage paid farm help winter months
Adair	1,995	167.6	334,344	16,044	126,174	612	485	509	37	165	21,052	47.34	40.80
Adams	1,501	162.6	244,066	9,740	97,747	435	1,443	795	26	166	16,561	47.73	36.67
Allamakee	2,028	183.0	371,167	9,648	165,559	8,933	225	40,563	28	322	24,421	46.81	34.30
Appanoose	1,833	146.6	268,807	10,089	125,884	2,645	2,074	2,102	36	65	3,829	42.58	44.78
Audubon	1,698	163.9	278,232	13,305	79,400	2,449	261	1,124	32	156	14,265	58.85	49.08
Benton	2,291	183.1	419,518	19,960	111,660	4,857	554	312	145	471	46,845	48.09	38.42
Black Hawk	2,048	156.9	321,284	15,869	87,202	6,551	994	2,439	102	721	69,243	50.48	39.42
Boone	2,352	144.6	340,176	17,522	82,607	2,782	2,038	682	133	209	17,061	48.84	45.83
Bremer	1,829	139.3	254,856	12,044	74,809	3,371	1,985	1,350	85	552	46,357	43 21	37.66
Buchanan	2,210	153.3	338,893	14,926	106,234	2,481	453	997	53	321	27,158	45.00	33.60
Buena Vista	1,923	177.5	341,271	18,641	70,419	1,637	779	881	157	226	22,867	61.00	51.00
Butler	1,987	166.1	330,058	17,527	87,099	1,768	553	856	62	272	25,014	45.32	34.57
Calhoun	1,896	177.3	336,164	15,327	56,459	1,052	1,010	1,404	172	59	4,415	55.30	47.73
Carroll	1,986	167.1	331,846	17,064	82,731	1,265	1,301	906	141	87	7,888	51.26	32.33
Cass	2,002	168.8	337,856	16,069	105,192	1,107	1,100	1,523	125	183	21,817	54.66	48.80
Cedar	2,043	159.6	326,128	14,901	101,995	9,731	253	1,453	123	264	25,924	49.55	42.50
Cerro Gordo	1,811	179.7	325,392	16,002	81,353	4,265	7,071	5,479	90	305	29,342	50.00	40.00
Cherokee	1,777	195.4	347,388	17,650	82,704	2,297	528	1,067	173	173	19,311	61.44	39.96
Chickasaw	1,888	150.1	283,407	12,718	85.578	3,400	979	1,175	20	299	26,586	44.97	33.64
Clarke	1,353	176.6	239,041	9,318	105,929	2,244	380	3,484	13	138	12,850	39.65	38.48
Clay	1,604	199.4	319,814	16,995	74,119	4,365	594	2,509	164	168	16,580	54.00	42.06
Clayton	2,695	156.0	420,450	15,306	172,302	11,942	2,364	9,573	120	439	32,944	42.15	40.26
Clinton	2,517	163.1	410,604	17,360	147,366	3,197	271	1,970	108	248	27,492	43.75	33.01
Crawford	2,364	179.0	423,116	21,635	116,907	1,590	1,771	2,048	83	82	8,814	54.54	40.34
Dallas	2,160	158.0	341,183	14,795	92,087	5,044	1,716	2,440	138	259	27,306	48.75	45.11
Davis	2,296	140.5	322,572	9,088	146,832	6,343	728	8,321	21	69	3,302	39 35	37.00
Decatur	1,831	161.3	295,426	10,734	126,950	1,650	2,258	2,195	34	72	4,673	43.88	38.66

Deleware	2,046	163.6	334,673	13,751	112,079	2,268	254	2,592	60	629	51,270	43.60	39.00
Des Moines	1,713	132.6	227,091	7,565	83,502	22,704	1,301	3,401	82	145	12,730	45.71	36.27
Dickinson	1,005	206.1	207,159	10,199	52,042	1,421	321	1,981	49	61	5,480	51.00	44.00
Dubuque	2,184	158.3	345,846	10,522	145,049	9,298	742	4,819	35	139	11,278	49.15	34.49
Emmet	1,025	201.0	206,019	10,555	52,397	1,869	1,520	2,153	66	185	16,367	52.58	37.32
Fayette	2,918	141.8	413,894	18,904	141,297	5,205	1,531	2,659	54	635	50,264	44.95	39.40
Floyd	1,880	155.5	292,394	14,569	71,902	2,171	1,429	1,066	41	350	33,655	49.51	37.07
Franklin	1,963	176.6	346,656	18,713	82,090	1,526	1,976	2,473	97	311	33,274	51.52	39.51
Fremont	1,193	155.9	363,983	11,112	69,591	1,294	902	4,003	41	125	12,797	51.55	49.75
Greene	1,930	173.3	334,452	14,424	79,156	1,437	220	1,635	115	80	8,365	47.03	45.93
Grundy	1,573	189.1	297,495	16,086	62,407	847	406	265	93	220	19,737	51.89	36.33
Guthrie	2,173	150.9	327,801	14,084	100,511	3,771	658	1,940	58	78	6,687	46.56	37.40
Hamilton	2,105	162.6	342,356	16,602	71,112	2,447	1,892	4,366	196	202	20,006	51.92	45.65
Hancock	1,901	182.3	346,605	17,792	75,131	2,586	3,411	5,343	70	293	24,335	53.88	32.50
Hardin	1,855	169.2	313,776	16,158	73,925	2,707	1,407	973	88	156	13,781	51.57	47.04
Harrison	2,365	156.4	357,996	15,551	93,926	10,038	3,154	5,990	100	95	9,331	53.74	53.41
Henry	1,718	141.2	242,642	8,929	95,879	3,209	1,570	588	29	97	9,400	46.39	46.65
Howard	1,531	167.7	256,740	9,981	76,983	1,696	802	1,230	21	311	25,096	47.04	27.85
Humboldt	1,359	188.4	256,077	14,635	45,563	1,204	939	1,737	160	261	30,172	59.47	40.58
Ida	1,402	187.9	263,418	14,417	59,164	1,960	492	337	123	63	6,295	64.92	34.66
Iowa	2,079	161.2	335,221	13,779	111,993	14,221	898	11,273	97	345	33,081	51.28	44.53
Jackson	2,273	161.3	366,772	9,563	184,629	7,264	582	5,229	28	228	23,272	49.76	42.59
Jasper	2,828	151.9	429,834	20,447	139,546	4,111	630	4,882	102	349	33,482	47.77	45.98
Jefferson	1,755	138.9	243,845	8,933	97,754	7,434	261	738	22	161	12,470	47.75	41.33
Johnson	2,304	148.9	343,068	12,188	123,366	14,219	5,227	4,355	163	378	33,177	51.00	42.00
Jones	1,954	163.0	318,409	9,812	132,774	5,114	1,384	931	56	314	34,188	45.74	39.32
Keokuk	2,480	135.2	335,426	13,673	124,057	7,653	1,386	5,139	53	238	20,905	45.58	43.61
Kossuth	2,791	201.1	561,245	27,763	116,052	6,765	2,957	10,270	212	461	47,245	52.83	42.08
Lee	1,987	141.5	281,195	9,816	130,687	11,415	1,518	2,950	32	213	15,269	41.65	40.50
Linn	3,041	126.2	383,771	15,828	119,395	11,125	1,181	4,418	69	615	52,888	47.14	40.07
Louisa	1,322	158.3	209,312	5,788	73,054	7,413	3,093	3,638	83	182	18,929	49.86	49.03
Lucas	1,539	160.2	246,502	7,648	115,941	4,851	58	761	31	218	19,120	45.66	42.60
Lyon	1,691	204.8	346,406	18,159	60,664	2,422	761	418	125	71	4,555	57.09	41.39
Madison	2,035	155.6	316,564	14,457	133,350	8,540	3,860	4,530	76	272	29,688	50.24	48.80
Mahaska	2,482	134.1	332,936	12,987	115,271	17,317	1,625	5,127	71	223	20,168	46.51	48.10
Marion	2,177	152.2	331,424	11,702	130,482	3,036	5,394	8,432	49	285	33,851	49.43	45.69
Marshall	2,066	158.8	328,002	17,131	83,825	744	830	4,111	135	312	27,974	49.45	42.14
Mills	1,440	165.7	238,624	10,610	68,972	5,088	2,683	2,116	77	64	6,230	49.00	43.30
Mitchell	1,704	164.1	275,642	13,914	70,289	3,707	1,210	1,267	90	387	44,134	47.12	32.78
Monona	2,031	185.1	375,851	15,853	93,676	9,280	3,346	18,439	170	128	4,860	50.98	40.10
Monroe	1,551	149.5	231,850	8,857	123,513	9,002	343	709	5	127	9,993	44.10	42.00
Montgomery	1,507	163.9	246,964	10,789	80,582	627	3,044	545	66	92	10,073	53.00	49.75
Muscatine	1,564	155.0	242,433	8,578	80,369	4,488	4,041	1,744	94	281	30,860	48.40	42.64
O'Brien	1,798	190.8	343,157	19,017	74,354	4,381	750	230	208	120	11,234	58.57	34.44
Osceola	1,163	203.6	236,843	12,449	43,991	4,917	661	1,411	105	82	6,923	57.82	43.37
Page	1,975	156.3	308,708	12,584	106,880	323	2,577	1,062	56	58	7,331	50.92	48.93
Palo Alto	1,697	183.7	311,828	16,509	59,896	3,135	6,300	2,926	83	117	11,055	51.29	39.76
Plymouth	2,623	197.9	519,119	28,011	109,937	4,387	3,981	1,263	182	152	12,625	58.50	41.00
Pocahontas	2,006	176.2	353,382	16,807	72,813	1,353	402	1,440	230	162	14,248	48.55	37.11
Polk	2,371	130.1	308,326	13,204	91,839	24,049	2,158	5,386	162	231	15,015	50.46	43.35

TABLE NO. 1—Continued.

Counties	Number of farms	Average size of farms	Total acreage of farms	Total number of acres occupied by farm buildings, public highways and feed lots	Acreage in pasture	Number bushels of apples harvested	Acreage in crops not otherwise enumerated	Acreage in waste land not utilized for any purpose	Number of tractors on farms	Number of silos on farms	Number of tons of silage put up	Av. mo. wage paid farm help summer months	Av. mo. wage paid farm help winter months
Pottawattamie	2,980	171.3	510,357	24,598	134,528	3,670	4,438	3,950	159	111	13,044	58.32	49.09
Poweshiek	2,082	161.2	335,521	12,483	113,555	4,237	1,716	519	86	312	32,250	50.22	48.97
Ringgold	1,875	160.4	300,979	12,652	131,739	941	1,596	781	18	169	15,636	45.75	45.38
Sac	1,808	185.5	335,529	18,154	73,590	493	743	274	154	113	13,017	55.94	40.23
Scott	2,099	128.1	268,964	10,583	78,636	14,897	1,276	1,426	103	335	36,163	52.86	32.65
Shelby	1,980	177.1	350,680	15,580	102,395	2,015	1,944	899	71	78	10,071	56.63	38.24
Sioux	2,549	173.7	442,749	22,138	77,533	1,565	968	203	171	206	19,326	42.27	39.07
Story	2,108	156.4	329,501	16,904	67,081	341	1,467	641	103	308	28,138	51.60	46.30
Tama	2,441	172.6	421,304	19,182	131,433	3,953	2,508	3,113	118	342	42,751	57.00	44.00
Taylor	1,938	156.7	303,750	14,838	121,524	661	2,803	1,612	27	239	20,458	47.48	42.00
Union	1,488	162.5	241,758	10,572	104,656	2,817	2,383	1,093	23	143	14,716	40.49	44.90
Van Buren	1,852	142.9	264,596	9,453	124,436	10,716	2,084	955	17	188	13,712	41.30	39.61
Wapello	1,818	128.6	235,881	7,806	96,474	14,801	8,258	3,188	27	98	6,304	42.50	40.50
Warren	2,176	157.2	342,145	11,368	130,961	10,011	415	1,496	43	241	23,871	69.36	26.48
Washington	1,971	161.1	317,569	12,607	112,593	11,925	239	960	88	175	31,784	45.90	44.80
Wayne	1,878	163.0	306,197	12,399	120,144	2,243	403	749	34	103	8,434	37.77	38.88
Webster	2,365	173.8	411,179	17,130	85,175	3,030	1,549	4,474	272	186	17,962	50.55	36.31
Winnebago	1,545	159.3	246,044	15,261	54,285	2,466	762	7,013	53	208	22,777	50.70	48.20
Winneshiek	2,728	150.6	410,752	16,442	144,982	8,679	1,720	7,286	55	366	27,097	46.27	30.82
Woodbury	2,653	178.7	474,211	20,456	106,999	7,630	917	2,957	140	222	20,728	54.23	48.99
Worth	1,487	160.4	238,449	12,919	59,860	4,540	1,558	2,944	76	177	20,925	50.75	35.17
Wright	1,779	188.7	335,741	17,340	70,670	2,359	2,691	5,935	171	167	15,528	51.67	37.59
Grand total	196,091	163.3	32,006,647	1,421,547	9,759,204	500,042	164,694	315,916	8,940	22,280	2,085,772	49.79	41.08

TABLE NO. 2.

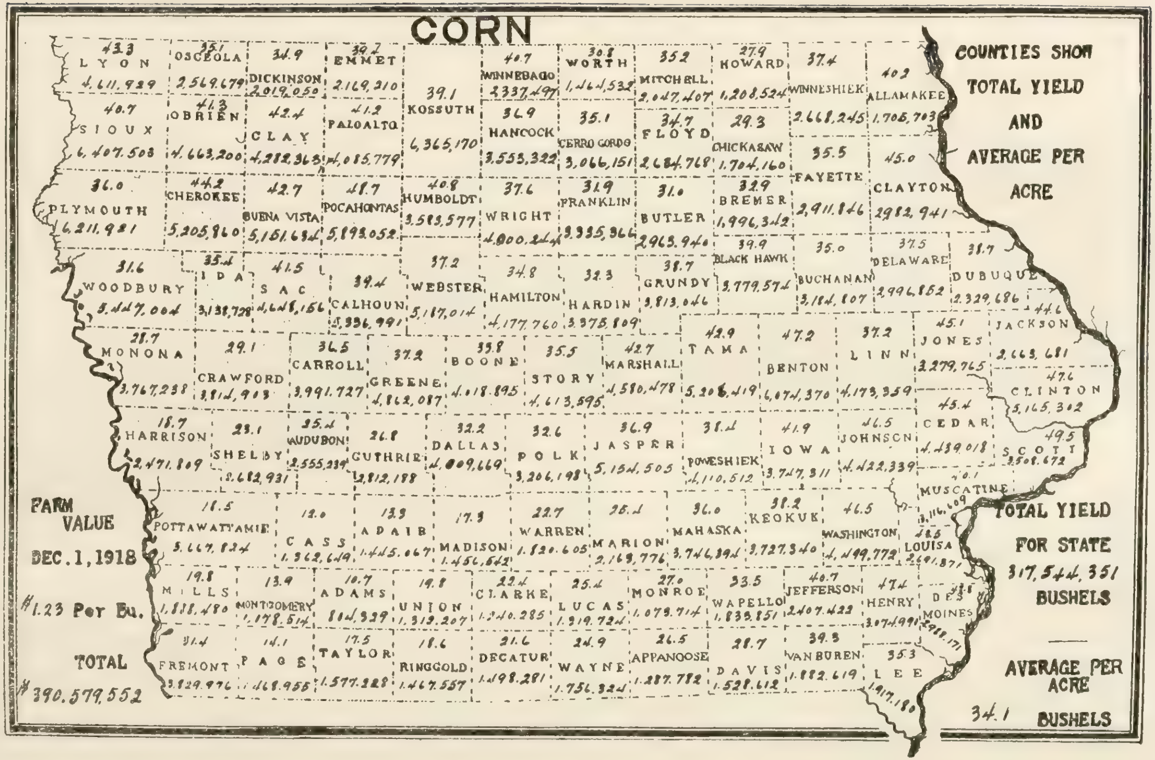
Acreage, yield per acre and total yield of corn, oats, winter wheat, spring wheat and barley, by counties, for the year 1918.

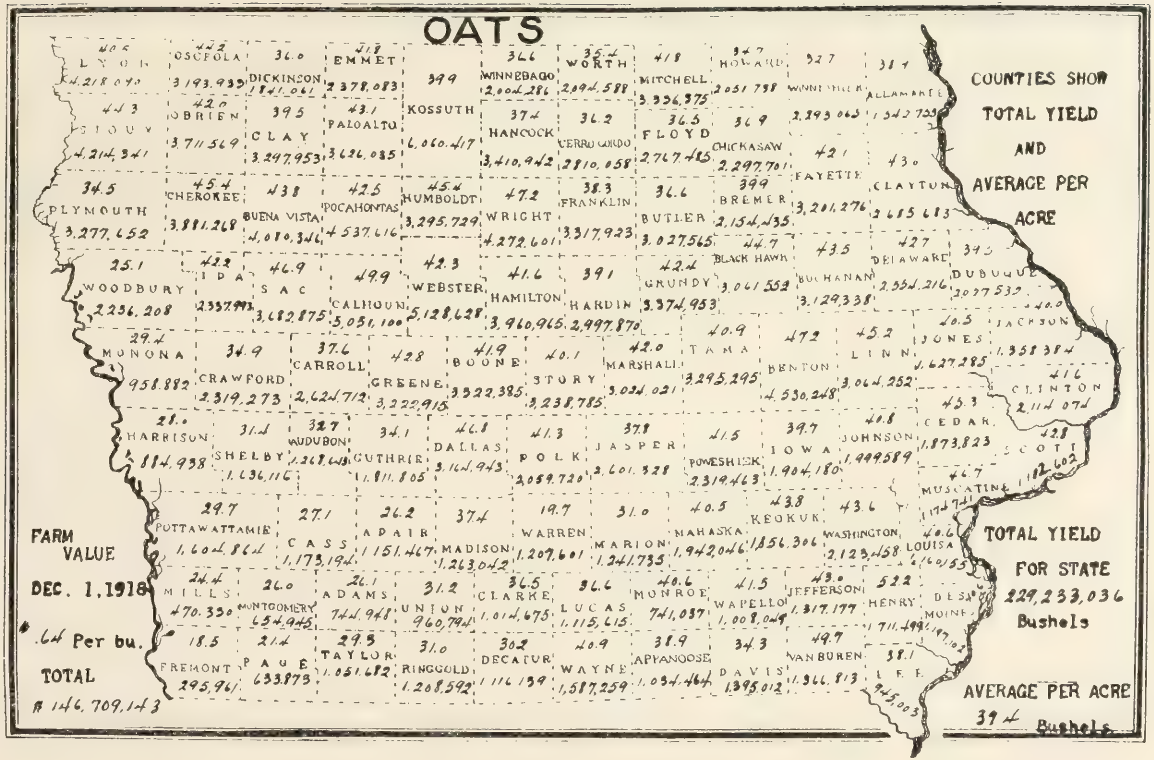
Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Adair	108,296	13.3	1,445,067	43,949	26.2	1,151,467	2,107	11.9	25,072	6,665	13.2	87,870	7,701	18.6	143,237
Adams	75,111	10.7	804,329	28,572	26.1	744,948	3,406	12.4	42,349	3,144	11.9	37,545	2,566	15.3	39,295
Allamakee	42,450	40.2	1,705,703	39,640	38.9	1,542,753	459	12.8	5,905	5,701	22.2	126,637	10,778	27.5	296,970
Appanoose	48,613	26.5	1,287,782	26,565	38.9	1,034,464	4,759	18.1	86,282	2,035	18.5	37,609	40	17.9	715
Audubon	100,531	25.4	2,555,239	38,804	32.7	1,268,643	120	15.4	1,842	6,471	18.4	119,974	13,028	27.8	362,022
Benton	128,608	47.2	6,074,370	96,040	47.2	4,530,248	237	17.3	4,101	4,261	20.0	85,083	12,661	32.3	409,149
Black Hawk	94,836	39.9	3,779,574	68,451	44.7	3,061,552	262	14.3	3,742	3,383	17.7	59,800	10,311	32.4	333,773
Boone	118,825	33.8	4,018,895	79,236	41.9	3,322,385	873	17.9	15,616	3,846	18.0	69,176	1,892	20.5	38,774
Bremer	60,663	32.9	1,996,342	53,956	39.9	2,154,435	50	17.5	873	3,332	14.8	49,437	3,340	25.2	84,162
Buchanan	90,967	35.0	3,184,807	72,021	43.5	3,129,338	103	13.1	1,354	4,007	19.0	72,147	7,430	29.2	216,891
Buena Vista	120,605	42.7	5,151,634	93,247	43.8	4,080,346	71	14.2	1,010	3,276	23.0	75,408	1,827	35.3	64,456
Butler	95,539	31.0	2,963,940	82,625	36.6	3,027,565	5	12.0	60	3,997	14.1	56,330	2,843	22.3	63,262
Calhoun	135,171	39.4	5,336,991	101,203	49.9	5,051,100	144	15.5	2,237	997	20.5	20,533	1,221	34.6	42,229
Carroll	109,304	36.5	3,991,727	69,867	37.6	2,624,712	844	20.4	17,231	9,204	19.6	180,890	3,583	27.7	99,085
Cass	113,886	12.0	1,362,649	43,275	27.1	1,173,194	5,110	16.1	82,402	9,898	14.3	141,802	14,935	21.2	317,675
Cedar	97,829	45.4	4,439,018	41,362	45.3	1,873,823	1,230	20.5	25,296	3,364	19.7	66,172	18,479	30.2	557,709
Cerro Gordo	87,245	35.1	3,066,151	77,615	36.2	2,810,058	60	13.2	791	5,099	16.2	82,381	5,602	25.4	142,392
Cherokee	117,763	44.2	5,205,860	85,465	45.4	3,881,268	76	18.9	1,436	1,869	22.3	41,789	4,625	34.2	158,258
Chickasaw	58,253	29.3	1,704,160	62,238	36.9	2,297,701	20	11.5	230	7,053	16.5	116,615	4,369	26.4	115,559
Clarke	55,317	22.4	1,240,285	27,773	36.5	1,014,675	6,447	15.7	101,249	702	14.8	10,404	255	21.4	5,473
Clay	100,970	42.4	4,282,363	83,449	39.5	3,297,953	126	19.6	2,473	2,069	21.0	43,438	3,202	33.6	107,522
Clayton	66,221	45.0	2,982,941	62,380	43.0	2,685,683	1,507	14.7	22,185	6,128	19.2	117,834	15,819	31.9	504,676
Clinton	108,445	47.6	5,165,302	50,827	41.6	2,114,074	3,536	19.0	67,019	6,463	20.4	132,010	18,697	34.7	649,622
Crawford	131,091	29.1	3,814,903	66,527	34.9	2,319,273	1,159	19.6	22,664	22,594	19.3	435,811	5,277	30.5	161,195
Dallas	124,386	32.2	4,009,669	67,585	46.8	3,164,943	8,129	20.9	169,982	5,044	20.7	104,261	1,418	32.2	45,696
Davis	53,327	28.7	1,528,612	40,638	34.3	1,395,012	2,415	17.8	42,917	1,502	15.3	22,938	211	21.9	4,614
Decatur	69,490	21.6	1,498,281	36,927	30.2	1,116,139	8,662	17.3	149,753	926	14.4	13,357	56	21.7	1,220
Delaware	79,969	37.5	2,996,852	59,829	42.7	2,554,216	71	18.8	1,335	4,588	18.0	82,486	14,249	33.3	473,921
Des Moines	61,233	48.8	2,988,171	29,477	40.6	1,197,102	7,183	26.1	187,177	1,078	25.0	25,947	608	35.3	21,489
Dickinson	57,718	34.9	2,019,050	51,244	36.0	1,841,061	------	------	------	4,180	18.3	76,502	3,324	32.0	106,390

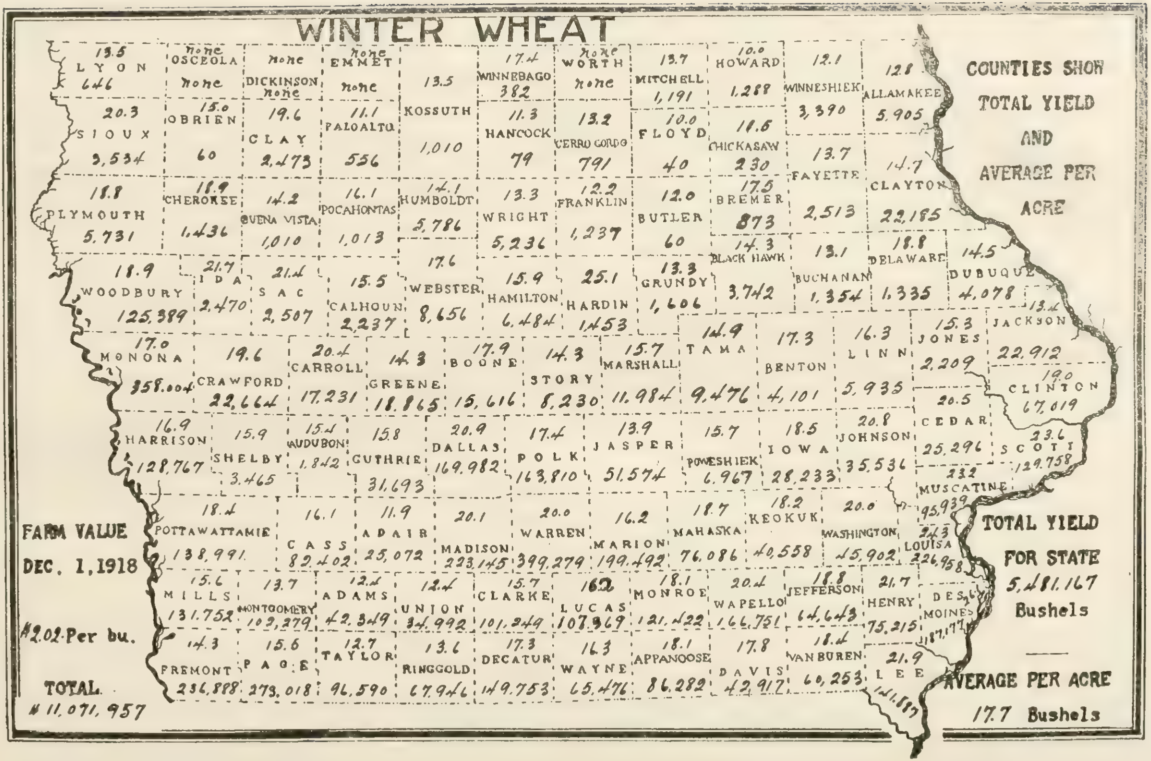
TABLE NO. 2—Continued.

Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Dubuque	60,128	38.7	2,329,686	51,348	39.5	2,027,532	281	14.5	4,078	5,993	20.5	122,884	8,378	30.6	256,297
Emmet	55,023	39.4	2,169,210	56,900	41.8	2,378,083	-------	-------	-------	2,069	18.5	38,189	3,301	27.3	90,222
Fayette	81,963	35.5	2,911,846	76,055	42.1	3,201,276	184	13.7	2,513	5,410	18.3	99,206	12,665	29.3	377,427
Floyd	75,865	34.7	2,634,768	75,772	36.5	2,767,485	4	10.0	40	5,440	16.0	87,244	5,470	26.7	145,797
Franklin	104,587	31.9	3,335,366	86,580	38.3	3,317,923	101	12.2	1,237	2,564	15.4	39,441	6,708	22.3	149,720
Fremont	121,917	31.4	3,829,976	15,924	18.5	295,961	16,584	14.3	236,888	3,546	12.2	43,322	483	13.3	6,425
Greene	130,565	37.2	4,862,087	75,280	42.8	3,222,915	1,320	14.3	18,865	3,903	17.6	68,825	1,335	27.5	36,703
Grundy	98,582	38.7	3,813,046	79,553	42.4	3,374,953	121	13.3	1,606	3,202	17.9	57,327	6,558	34.6	226,636
Guthrie	104,877	26.8	2,812,188	53,075	34.1	1,811,805	2,001	15.8	31,693	6,502	14.5	94,159	2,597	19.6	50,783
Hamilton	120,138	34.8	4,177,760	95,126	41.6	3,960,965	409	15.9	6,484	2,896	17.4	50,412	2,256	25.9	58,488
Hancock	96,058	36.9	3,553,322	91,224	37.4	3,410,942	7	11.3	79	5,505	16.5	91,490	5,086	25.0	130,159
Hardin	104,492	32.3	3,375,809	77,168	39.1	2,997,870	58	25.1	1,453	3,052	16.2	49,436	4,827	24.5	118,326
Harrison	137,066	18.7	2,471,809	31,510	28.0	884,938	7,585	16.9	128,767	30,152	16.0	483,425	3,216	25.5	82,190
Henry	64,814	47.4	3,074,991	32,744	52.2	1,711,499	3,463	21.7	75,215	1,134	18.3	20,738	347	31.8	11,040
Howard	43,243	27.9	1,208,524	59,130	34.7	2,051,738	129	10.0	1,288	4,475	16.1	71,959	6,816	23.5	150,084
Humboldt	87,683	40.8	3,583,577	72,602	45.4	3,295,729	409	14.1	5,786	3,971	19.1	75,733	4,141	33.5	138,851
Ida	85,798	35.4	3,138,728	55,398	42.2	2,337,993	114	21.7	2,470	6,015	21.3	128,131	5,296	34.8	184,078
Iowa	89,606	41.9	3,747,311	48,193	39.7	1,904,180	1,711	13.4	22,912	5,758	18.7	107,812	5,079	32.0	162,783
Jackson	59,719	44.6	2,663,681	33,968	40.0	1,358,384	1,532	18.5	28,233	4,634	18.3	84,679	3,841	29.5	113,459
Jasper	139,609	36.9	5,154,505	68,674	37.8	2,601,328	3,692	13.9	51,574	13,043	15.8	206,241	1,645	16.2	26,716
Jefferson	59,211	40.7	2,407,422	30,606	43.0	1,317,177	3,446	18.8	64,643	1,186	21.8	25,820	175	30.1	5,264
Johnson	95,165	46.5	4,422,339	48,951	40.8	1,999,589	1,710	20.8	35,536	3,180	19.6	62,455	2,771	33.1	91,816
Jones	72,737	45.1	3,279,765	40,159	40.5	1,627,285	144	15.3	2,209	3,384	18.2	61,530	10,818	35.2	380,906
Keokuk	97,541	38.2	3,727,340	42,341	43.8	1,856,306	2,224	18.2	40,558	7,331	17.2	126,079	489	28.4	13,870
Kossuth	165,844	39.1	6,365,170	151,826	39.9	6,060,417	74	13.5	1,010	8,888	15.8	140,039	9,020	30.1	271,409
Lee	54,314	35.3	1,917,180	24,771	38.1	945,003	6,473	21.9	141,887	1,695	17.6	29,929	640	25.4	16,229
Linn	112,088	37.2	4,173,359	67,845	45.2	3,064,252	364	16.3	5,935	5,598	19.3	108,161	5,638	31.1	175,406
Louisa	61,790	43.5	2,691,371	28,530	40.6	1,160,155	9,322	24.3	226,958	594	20.0	11,893	352	27.0	9,514
Lucas	52,004	25.4	1,319,724	30,483	36.6	1,115,615	6,618	16.2	107,369	1,873	16.6	31,040	144	15.7	2,254
Lyon	120,364	38.3	4,611,929	104,093	40.5	4,218,090	48	13.5	646	5,688	20.0	113,632	10,973	29.4	233,084
Madison	84,313	17.3	1,456,542	33,755	37.4	1,263,042	11,104	20.1	223,145	3,713	15.8	58,716	4,797	24.1	115,791
Mahaska	104,371	36.0	3,746,394	47,940	40.5	1,942,046	4,062	18.7	76,086	6,298	18.7	118,020	893	28.9	25,812

Marion	85,270	25.4	2,163,776	40,050	31.0	1,241,735	12,317	16.2	199,492	7,612	15.2	115,510	1,219	21.8	27,617
Marshall	107,207	42.7	4,580,478	71,916	42.0	3,024,021	763	15.7	11,984	7,835	12.1	94,640	1,391	2.40	33,428
Mills	95,550	19.8	1,888,480	19,310	24.4	470,330	8,426	15.6	131,752	7,269	13.8	100,520	1,843	18.6	34,284
Mitchell	58,208	35.2	2,047,407	79,821	41.8	3,336,375	87	13.7	1,191	5,191	19.0	98,419	4,408	29.4	129,652
Monona	131,128	28.7	3,767,238	32,532	29.4	958,882	20,943	17.0	358,004	26,960	17.5	474,151	1,893	24.0	45,435
Monroe	39,701	27.0	1,073,714	18,255	40.6	741,037	6,699	18.1	121,422	4,563	18.9	86,479	169	23.8	4,018
Montgomery	84,447	13.9	1,178,514	25,142	26.0	654.945	7,459	13.7	102,279	10,945	12.7	139,111	1,443	18.6	26,868
Muscatine	77,717	40.1	3,116,609	25,160	46.7	1,174,741	4,137	23.2	95,939	3,042	18.4	56,145	7,650	22.3	170,546
O'Brien	112,809	41.3	4,663,200	88,389	42.0	3,711.569	4	15.0	60	4,690	19.2	90,043	11,203	32.7	366,356
Osceola	73,125	35.1	2,569,679	72,318	44.2	3,193,933	--------	------	----------	2,821	16.5	46,635	5,501	33.6	184,815
Page	104,478	14.1	1,468,955	29,615	21.4	633,873	17,566	15.5	273,018	5,748	12.8	73,841	602	16.9	10,150
Palo Alto	99,268	41.2	4,085,779	84,065	43.1	3,626,035	50	11.1	556	3,868	16.7	64,619	1,903	32.5	61,769
Plymouth	172,753	36.0	6,211,921	95,075	34.5	3,277,652	306	18.8	5,731	47,413	16.5	783,720	7,526	28.6	215,998
Pocahontas	121,028	48.7	5,893,052	106,777	42.5	4,537,616	63	16.1	1,013	2,484	18.8	46,722	1,960	34.9	68,429
Polk	98,358	32.6	3,206,198	49,926	41.3	2,059,720	9,427	17.4	163,810	10,957	16.2	177,981	180	27.6	4,974
Pottawattamie	198,704	18.5	3,667,824	53,989	29.7	1,604.864	7,703	18.4	138,991	14,597	16.6	241,626	18,579	23.4	435,425
Poweshiek	107,318	38.4	4,110,512	55,896	41.5	2,319,463	445	15.7	6,967	5,428	17.9	93,119	4,716	27.4	129,353
Ringgold	78,632	18.6	1,467,557	38,626	31.0	1,208,592	4,982	13.6	67,946	572	12.9	7,323	303	15.8	4,794
Sac	112,585	41.5	4,648,156	78,610	46.9	3,682,875	117	21.4	2,507	1,826	22.4	40,983	6,264	36.8	228,265
Scott	70,950	49.5	3,508,672	25,977	42.8	1,112,602	5,487	23.6	129,758	4,298	21.0	90,254	30,844	30.8	949,437
Shelby	116,882	23.1	2,682,931	52,068	31.4	1,636,116	218	15.9	3,465	10,620	18.6	197,223	13,208	28.0	369,559
Sioux	157,533	40.7	6,407,503	97,432	44.3	4,214,341	174	20.3	3,534	18,961	17.6	333,227	28,037	21.5	601,923
Story	130,108	35.5	4,613,595	80,692	40.1	3,238,785	569	14.3	8,230	3,465	14.8	50,870	143	24.5	3,498
Tama	121,423	42.9	5,206,419	80,494	40.9	3,295,295	637	14.9	9,476	7,494	18.6	139,115	14,399	32.2	463,257
Taylor	84,522	17.5	1,577,228	35,882	29.3	1,051,682	7,576	12.7	96,590	2,589	13.6	35,174	509	20.9	10,636
Union	66,277	19.8	1,312,207	30,797	31.2	960,794	2,827	12.4	34,992	1,140	12.3	14,013	1,552	18.6	28,820
Van Buren	52,068	39.3	1,882,619	27,522	49.7	1,366,813	3.284	18.4	60,253	1,056	18.0	18,019	121	22.9	2,770
Wapello	54,724	33.5	1,833,851	24,274	41.5	1,008,049	8,184	20.4	166,751	2,456	19.5	47,823	493	27.7	13,540
Warren	80,235	22.7	1,820,605	61,417	19.7	1,207,601	19,923	20.0	399,279	5,562	17.4	96,457	1,749	28.1	48,111
Washington	96,692	46.5	4,499,772	48,673	43.6	1,123.458	2,285	20.0	45,902	3,506	19.4	68,121	576	26.5	15,274
Wayne	70,581	24.9	1,756,324	38,845	40.9	1,587,259	4,019	16.3	65,476	604	15.8	9,514	100	21.2	2,124
Webster	139,285	37.2	5,187,014	121,259	42.3	5,128,628	491	17.6	8,656	4,964	19.4	96,369	1,573	28.2	44,464
Winnebago	57,460	40.7	2,337,497	54,777	36.6	2,004,286	22	17.4	382	8,558	17.8	152,387	7,443	29.1	216,309
Winneshiek	71,435	37.4	2,668,245	70,054	32.7	2,293.065	280	12.1	3,390	12,326	16.4	202,538	17,018	26.4	448,016
Woodbury	172,519	31.6	5,447,004	89,209	25.1	2,236,208	6,651	18.9	125,389	25,167	17.4	437,884	3,973	25.7	102,126
Worth	47,599	30.8	1,464,532	59,165	35.4	2,094,588	--------	------	----------	7,861	17.6	137,967	5,524	22.7	125,330
Wright	106,518	37.6	4,000,244	90,546	47.2	4,272,601	393	13.3	5,236	4,028	17.0	68,414	4,858	23.8	115,699
Grand total	9,309,234	34.1	317,544,351	5,822,869	39.4	229,233,036	308,979	17.7	5,481,167	610,044	17.3	10,527,209	537,975	28.4	15,258,039


CORN
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 317,544,351 BUSHELS
AVERAGE PER ACRE 34.1 BUSHELS
FARM VALUE DEC. 1, 1918 $1.23 Per Bu.
TOTAL $390,579,552
43.3 LYON 4,611,929
35.1 OSCEOLA 2,569,679
34.9 DICKINSON 2,019,050
39.2 EMMET 2,169,210
39.1 KOSSUTH 6,365,170
40.7 WINNEBAGO 2,337,497
30.8 WORTH 1,464,532
35.2 MITCHELL 2,047,407
27.9 HOWARD 1,208,524
37.4 WINNESHIEK 2,668,245
40.2 ALLAMAKEE 1,705,703
40.7 SIOUX 6,407,503
41.3 OBRIEN 4,663,200
42.4 CLAY 4,282,363
41.2 PALOALTO 4,085,779
36.9 HANCOCK 3,553,322
35.1 CERRO GORDO 3,066,151
34.7 FLOYD 2,684,768
29.3 CHICKASAW 1,704,160
35.5 FAYETTE 2,911,846
45.0 CLAYTON 2982,941
36.0 PLYMOUTH 6,211,921
44.2 CHEROKEE 5,205,860
42.7 BUENA VISTA 5,151,634
48.7 POCAHONTAS 5,893,052
40.8 HUMBOLDT 3,583,577
37.6 WRIGHT 4,000,244
31.9 FRANKLIN 3,335,366
31.0 BUTLER 2,965,940
32.9 BREMER 1,996,342
39.9 BLACK HAWK 3,779,574
35.0 BUCHANAN 3,184,807
37.5 DELAWARE 2,996,852
38.7 DUBUQUE 2,329,686
31.6 WOODBURY 5,447,004
35.4 IDA 3,138,728
41.5 SAC 4,648,156
39.4 CALHOUN 3,336,991
37.2 WEBSTER 5,187,014
34.8 HAMILTON 4,177,760
32.3 HARDIN 3,375,809
38.7 GRUNDY 3,813,046
28.7 MONONA 3,767,238
29.1 CRAWFORD 3,814,903
36.5 CARROLL 3,991,727
37.2 GREENE 4,862,087
33.8 BOONE 4,018,895
35.5 STORY 4,613,595
42.7 MARSHALL 4,580,478
42.9 TAMA 5,206,419
47.2 BENTON 6,074,370
37.2 LINN 4,173,359
45.1 JONES 3,279,765
44.6 JACKSON 3,663,681
47.6 CLINTON 5,165,302
18.7 HARRISON 2,471,809
23.1 SHELBY 2,682,931
25.4 AUDUBON 2,555,239
26.8 GUTHRIE 2,812,188
32.2 DALLAS 4,009,669
32.6 POLK 3,206,198
36.9 JASPER 5,154,505
38.4 POWESHIEK 4,110,512
41.9 IOWA 3,747,311
46.5 JOHNSON 4,422,339
45.4 CEDAR 4,439,018
49.5 SCOTT 3,508,672
40.1 MUSCATINE 3,116,609
18.5 POTTAWATTAMIE 5,667,824
12.0 CASS 1,362,649
13.9 ADAIR 1,445,067
17.3 MADISON 1,456,642
22.7 WARREN 1,820,605
28.4 MARION 2,169,776
36.0 MAHASKA 3,746,394
38.2 KEOKUK 3,727,340
46.5 WASHINGTON 4,499,772
48.5 LOUISA 2,691,871
19.8 MILLS 1,818,480
13.9 MONTGOMERY 1,178,514
10.7 ADAMS 804,329
19.8 UNION 1,313,207
22.4 CLARKE 1,240,285
25.4 LUCAS 1,319,724
27.0 MONROE 1,079,714
33.5 WAPELLO 1,835,851
40.7 JEFFERSON 2,407,422
47.4 HENRY 3,074,991
41.6 DES MOINES 2,988,171
31.4 FREMONT 3,129,976
14.1 PAGE 1,468,955
17.5 TAYLOR 1,577,228
18.6 RINGGOLD 1,467,557
21.6 DECATUR 1,498,281
24.9 WAYNE 1,756,324
26.5 APPANOOSE 1,287,782
28.7 DAVIS 1,528,612
39.3 VAN BUREN 1,882,619
35.3 LEE 1,917,180


OATS
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
LYON 40.6 4.218 040
OSCEOLA 44.2 3 193.939
DICKINSON 36.0 1841.061
EMMET 41.8 2 378,083
KOSSUTH 39.9 6,060.417
WINNEBAGO 36.6 2,004,286
WORTH 35.4 2,094,588
MITCHELL 41.8 3.336,375
HOWARD 34.7 2051 798
WINNESHIEK 32.7 2.293 063
ALLAMAKEE 31.4 1 542 733
SIOUX 44.3 4,214,341
OBRIEN 42.0 3.711 569
CLAY 39.5 3.247.953
PALOALTO 43.1 3.626.085
HANCOCK 37.4 3,410,942
CERRO GORDO 36.2 2810,058
FLOYD 36.5 2.767.485
CHICKASAW 36.9 2.297.701
FAYETTE 42.1 3,201,276
CLAYTON 43.0 2 685 683
PLYMOUTH 34.5 3.277.652
CHEROKEE 45.4 3.881.268
BUENA VISTA 43.8 4,080,346
POCAHONTAS 42.5 4 537.616
HUMBOLDT 45.4 3,295,729
WRIGHT 47.2 4.272.601
FRANKLIN 38.3 3.317,923
BUTLER 36.6 3.027.565
BREMER 39.9 2,154,435
BLACK HAWK 44.7 3.061 552
BUCHANAN 43.5 3.129,338
DELAWARE 42.7 2.554.216
DUBUQUE 34.3 2077 532
WOODBURY 25.1 2236.208
IDA 42.2 2337.993
SAC 46.9 3,682.875
CALHOUN 49.9 5,051,100
WEBSTER 42.3 5,128,628
HAMILTON 41.6 3,960,965
HARDIN 39.1 2,997.870
GRUNDY 42.4 3.374,953
MONONA 29.4 958.882
CRAWFORD 34.9 2.319,273
CARROLL 37.6 2,624.712
GREENE 42.8 3,222,915
BOONE 41.9 3.322,385
STORY 40.1 3,238,785
MARSHALL 42.0 3.034.021
TAMA 40.9 3.295,295
BENTON 47.2 4.530,248
LINN 45.2 3.064.252
JONES 40.5 1.627.285
JACKSON 40.0 1.358 384
CLINTON 41.6 2.114 074
HARRISON 28.0 884.938
SHELBY 31.4 1.636,116
AUDUBON 32.7 1.268,643
GUTHRIE 34.1 1.811.805
DALLAS 46.8 3.164.943
POLK 41.3 2,059.720
JASPER 37.8 2.601.328
POWESHIEK 41.5 2.319.463
IOWA 39.7 1.904.180
JOHNSON 40.8 1.999.589
CEDAR 45.3 1.873.823
SCOTT 42.8 1.182.602
MUSCATINE 46.7 1.174.741
POTTAWATTAMIE 29.7 1.604.864
CASS 27.1 1,173,194
ADAIR 26.2 1151.467
MADISON 37.4 1.263,042
WARREN 19.7 1.207.601
MARION 31.0 1.241.735
MAHASKA 40.5 1.942,046
KEOKUK 43.8 1856.306
WASHINGTON 43.6 2.123,458
LOUISA 40.6 1.160,155
MILLS 24.4 470.330
MONTGOMERY 26.0 654.945
ADAMS 26.1 744.948
UNION 31.2 960,794
CLARKE 36.5 1.014.675
LUCAS 36.6 1,115,615
MONROE 40.6 741,037
WAPELLO 41.5 1,008,049
JEFFERSON 43.0 1.317.177
HENRY 52.2 1 711.499
DES MOINES 1.197,102
FREMONT 18.5 295,961
PAGE 21.4 633.873
TAYLOR 29.3 1.051.682
RINGGOLD 31.0 1.208.592
DECATUR 30.2 1 116 139
WAYNE 40.9 1,587,259
APPANOOSE 38.9 1.034.464
DAVIS 34.3 1395.012
VAN BUREN 49.7 1.366.813
LEE 38.1 945,003
FARM VALUE
DEC. 1, 1918
$ .64 Per bu.
TOTAL
$ 146,709,143
TOTAL YIELD
FOR STATE
229,233,036
Bushels
AVERAGE PER ACRE
39.4 Bushels



WINTER WHEAT

COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE

TOTAL YIELD FOR STATE 5,481,167 Bushels

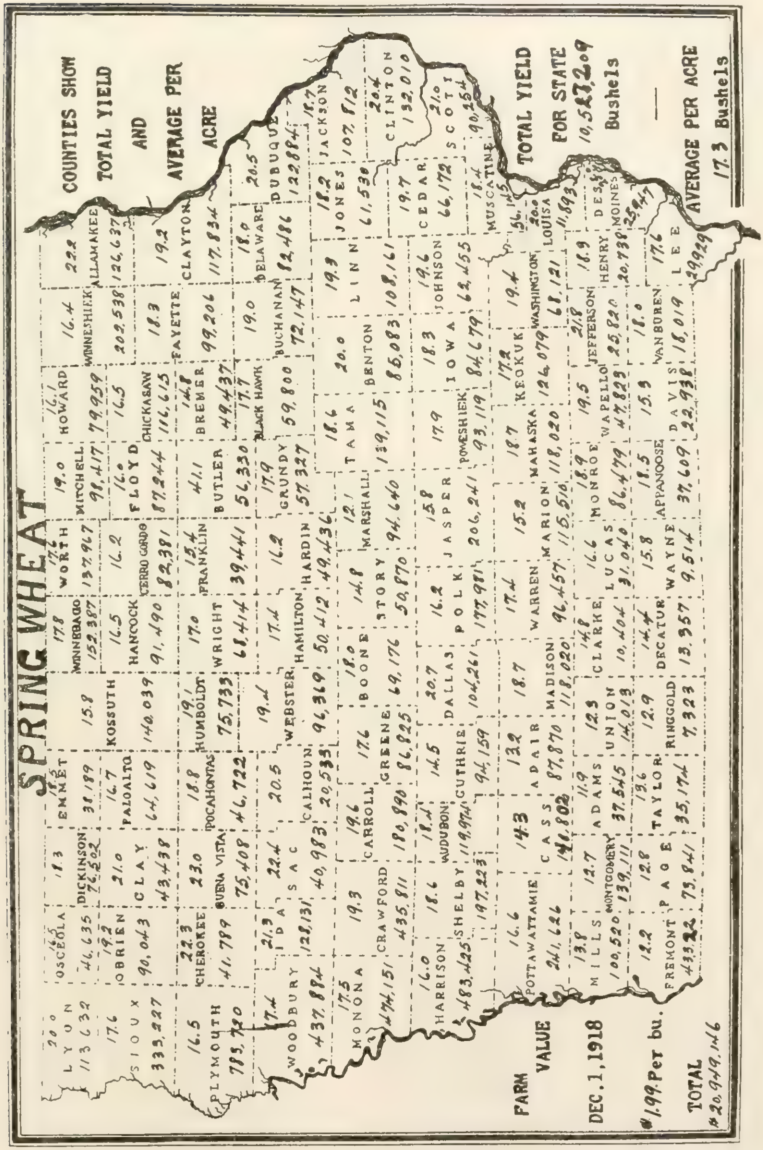
AVERAGE PER ACRE 17.7 Bushels

FARM VALUE DEC. 1, 1918

$2.02 Per bu.

TOTAL. $11,071,957

LYON 13.5 646
OSCEOLA none none
DICKINSON none none
EMMET none none
KOSSUTH 13.5 1,010
WINNEBAGO 17.4 382
WORTH none none
MITCHELL 13.7 1,191
HOWARD 10.0 1,288
WINNESHIEK 12.1 3,390
ALLAMAKEE 12.8 5,905
SIOUX 20.3 3,534
OBRIEN 15.0 60
CLAY 19.6 2,473
PALOALTO 11.1 556
HANCOCK 11.3 79
CERRO GORDO 13.2 791
FLOYD 10.0 40
CHICKASAW 11.6 230
FAYETTE 13.7 2,513
CLAYTON 14.7 22,185
PLYMOUTH 18.8 5,731
CHEROKEE 18.9 1,436
BUENA VISTA 14.2 1,010
POCAHONTAS 16.1 1,013
HUMBOLDT 14.1 5,786
WRIGHT 13.3 5,236
FRANKLIN 12.2 1,237
BUTLER 12.0 60
BREMER 17.5 873
BLACK HAWK 14.3 3,742
BUCHANAN 13.1 1,354
DELAWARE 18.8 1,335
DUBUQUE 14.5 4,078
WOODBURY 18.9 125,389
IDA 21.7 2,470
SAC 21.4 2,507
CALHOUN 15.5 2,237
WEBSTER 17.6 8,656
HAMILTON 15.9 6,484
HARDIN 25.1 1,453
GRUNDY 13.3 1,606
TAMA 14.9 9,476
BENTON 17.3 4,101
LINN 16.3 5,935
JONES 15.3 2,209
JACKSON 13.4 22,912
MONONA 17.0 358,004
CRAWFORD 19.6 22,664
CARROLL 20.4 17,231
GREENE 14.3 18,865
BOONE 17.9 15,616
STORY 14.3 8,230
MARSHALL 15.7 11,984
CLINTON 19.0 67,019
CEDAR 20.5 25,296
HARRISON 16.9 128,767
SHELBY 15.9 3,465
AUDUBON 15.4 1,842
GUTHRIE 15.8 31,693
DALLAS 20.9 169,982
POLK 17.4 163,810
JASPER 13.9 51,574
POWESHIEK 15.7 6,967
IOWA 18.5 28,233
JOHNSON 20.8 35,536
SCOTT 23.6 129,758
MUSCATINE 23.2 95,939
POTTAWATTAMIE 18.4 138,991
CASS 16.1 82,402
ADAIR 11.9 25,072
MADISON 20.1 223,145
WARREN 20.0 399,279
MARION 16.2 199,492
MAHASKA 18.7 76,086
KEOKUK 18.2 40,558
WASHINGTON 20.0 45,902
LOUISA 24.3 226,958
MILLS 15.6 131,752
MONTGOMERY 13.7 103,279
ADAMS 12.4 42,349
UNION 12.4 34,992
CLARKE 15.7 101,249
LUCAS 16.2 107,969
MONROE 18.1 121,422
WAPELLO 20.4 166,751
JEFFERSON 18.8 64,643
HENRY 21.7 75,215
DES MOINES 26 187,177
FREMONT 14.3 236,888
PAGE 15.6 273,018
TAYLOR 12.7 96,590
RINGGOLD 13.6 67,946
DECATUR 17.3 149,753
WAYNE 16.3 65,476
APPANOOSE 18.1 86,282
DAVIS 17.8 42,917
VAN BUREN 18.4 60,253
LEE 21.9 141,887



SPRING WHEAT

COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 10,527,209 Bushels
AVERAGE PER ACRE 17.3 Bushels
FARM VALUE DEC. 1, 1918 $1.99 Per bu.
TOTAL $20,949,146
LYON 20.0 113,632
OSCEOLA 16.5 26,635
DICKINSON 18.3 72,202
EMMET 17.5 31,189
KOSSUTH 15.8 140,039
WINNEBAGO 17.8 152,387
WORTH 17.6 137,967
MITCHELL 19.0 98,417
HOWARD 16.1 79,959
WINNESHIEK 16.4 202,538
ALLAMAKEE 22.2 126,637
SIOUX 17.6 333,227
OBRIEN 19.2 90,043
CLAY 21.0 43,438
PALOALTO 16.7 64,619
HANCOCK 16.5 91,490
CERRO GORDO 16.2 82,381
FLOYD 16.0 87,244
CHICKASAW 16.5 116,615
FAYETTE 18.3 99,206
CLAYTON 19.2 117,834
PLYMOUTH 16.5 785,720
CHEROKEE 22.3 41,789
BUENA VISTA 23.0 75,408
POCAHONTAS 18.8 46,722
HUMBOLDT 19.1 75,733
WRIGHT 17.0 68,414
FRANKLIN 15.4 39,441
BUTLER 41.1 56,330
BREMER 14.8 49,437
BUCHANAN 19.0 72,147
DELAWARE 18.0 82,486
DUBUQUE 20.5 122,884
WOODBURY 17.4 437,884
IDA 21.3 128,131
SAC 22.4 40,983
CALHOUN 20.5 20,533
WEBSTER 19.2 96,369
HAMILTON 17.2 50,412
HARDIN 16.2 49,436
GRUNDY 17.9 57,327
BLACK HAWK 17.7 59,800
MONONA 17.5 174,151
CRAWFORD 19.3 435,811
CARROLL 19.6 180,890
GREENE 17.6 86,825
BOONE 18.0 69,176
STORY 14.8 50,870
MARSHALL 12.1 94,640
TAMA 18.6 139,115
BENTON 20.0 85,083
LINN 19.3 108,161
JONES 18.2 61,530
JACKSON 16.7 107,812
CLINTON 20.4 132,010
HARRISON 16.0 483,425
SHELBY 18.6 197,223
AUDUBON 18.2 119,974
GUTHRIE 14.5 94,159
DALLAS 20.7 104,261
POLK 16.2 177,981
JASPER 15.8 206,241
POWESHIEK 17.9 93,119
IOWA 18.3 84,679
JOHNSON 19.6 62,155
CEDAR 19.7 66,172
SCOTT 21.0 90,254
MUSCATINE 18.4 56,145
POTTAWATTAMIE 16.6 241,626
CASS 14.3 141,802
ADAIR 13.2 87,870
MADISON 18.7 118,020
WARREN 17.2 96,457
MARION 15.2 115,516
MAHASKA 18.7 118,020
KEOKUK 17.2 126,079
WASHINGTON 19.4 68,121
LOUISA 20.0 11,893
MILLS 13.8 100,520
MONTGOMERY 12.7 139,111
ADAMS 11.9 37,545
UNION 12.5 14,013
CLARKE 14.8 10,204
LUCAS 16.6 31,040
MONROE 18.9 86,479
WAPELLO 19.5 47,823
JEFFERSON 21.8 25,820
HENRY 18.9 20,738
DES MOINES 25,947
FREMONT 12.2 43,322
PAGE 12.8 73,941
TAYLOR 13.6 35,174
RINGGOLD 12.9 7,323
DECATUR 14.4 13,357
WAYNE 15.8 9,514
APPANOOSE 18.5 37,609
DAVIS 15.9 22,938
VANBUREN 18.0 16,019
LEE 17.6 29,929

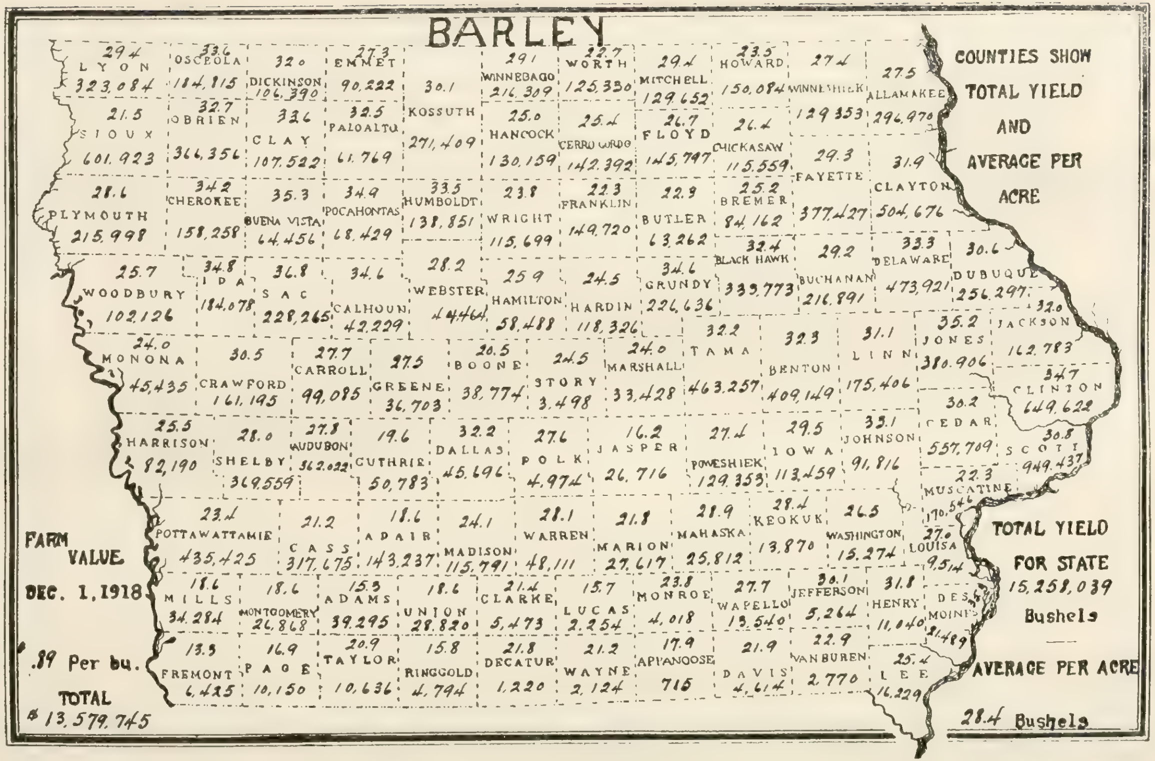

BARLEY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 15,258,039 Bushels
AVERAGE PER ACRE 28.4 Bushels
FARM VALUE DEC. 1, 1918
.89 Per bu.
TOTAL $13,579,745
LYON 29.4 323,084
OSCEOLA 33.6 184,815
DICKINSON 32.0 106,390
EMMET 27.3 90,222
KOSSUTH 30.1 271,409
WINNEBAGO 29.1 216,309
WORTH 22.7 125,330
MITCHELL 29.4 129,652
HOWARD 23.5 150,084
WINNESHIEK 27.4 129,353
ALLAMAKEE 27.5 296,970
SIOUX 21.5 601,923
OBRIEN 32.7 366,356
CLAY 32.6 107,522
PALOALTO 32.5 61,769
HANCOCK 25.0 130,159
CERRO GORDO 25.4 142,392
FLOYD 26.7 145,797
CHICKASAW 26.4 115,559
FAYETTE 29.3 377,427
CLAYTON 31.9 504,676
PLYMOUTH 28.6 215,998
CHEROKEE 34.2 158,258
BUENA VISTA 35.3 64,456
POCAHONTAS 34.9 68,429
HUMBOLDT 33.5 138,851
WRIGHT 23.8 115,699
FRANKLIN 22.3 149,720
BUTLER 22.9 63,262
BREMER 25.2 84,162
BLACK HAWK 32.4 339,773
BUCHANAN 29.2 216,891
DELAWARE 33.3 473,921
DUBUQUE 30.6 256,297
WOODBURY 25.7 102,126
IDA 34.8 184,078
SAC 36.8 228,265
CALHOUN 34.6 42,229
WEBSTER 28.2 44,464
HAMILTON 25.9 58,488
HARDIN 24.5 118,326
GRUNDY 34.6 226,636
JACKSON 32.0 162,783
MONONA 24.0 45,435
CRAWFORD 30.5 161,195
CARROLL 27.7 99,085
GREENE 27.5 36,703
BOONE 20.5 38,774
STORY 24.5 3,498
MARSHALL 24.0 33,428
TAMA 32.2 463,257
BENTON 32.3 409,149
LINN 31.1 175,406
JONES 35.2 380,906
CLINTON 34.7 649,622
HARRISON 25.5 82,190
SHELBY 28.0 369,559
AUDUBON 27.8 362,022
GUTHRIE 19.6 50,783
DALLAS 32.2 45,696
POLK 27.6 4,974
JASPER 16.2 26,716
POWESHIEK 27.4 129,353
IOWA 29.5 113,459
JOHNSON 33.1 91,816
CEDAR 30.2 557,709
SCOTT 30.8 949,437
MUSCATINE 22.3 170,546
POTTAWATTAMIE 23.4 435,425
CASS 21.2 317,675
ADAIR 18.6 143,237
MADISON 24.1 115,791
WARREN 28.1 48,111
MARION 21.8 27,617
MAHASKA 28.9 25,812
KEOKUK 28.4 13,870
WASHINGTON 26.5 15,274
LOUISA 27.0 9,514
MILLS 18.6 34,284
MONTGOMERY 18.6 26,868
ADAMS 15.5 39,295
UNION 18.6 28,820
CLARKE 21.4 5,473
LUCAS 15.7 2,254
MONROE 23.8 4,018
WAPELLO 27.7 13,540
JEFFERSON 30.1 5,264
HENRY 31.8 11,040
DES MOINES 21,489
FREMONT 13.5 6,425
PAGE 16.9 10,150
TAYLOR 20.9 10,636
RINGGOLD 15.8 4,794
DECATUR 21.8 1,220
WAYNE 21.2 2,124
APPANOOSE 17.9 715
DAVIS 21.9 4,614
VAN BUREN 22.9 2,770
LEE 25.4 16,229

TABLE NO. 3.

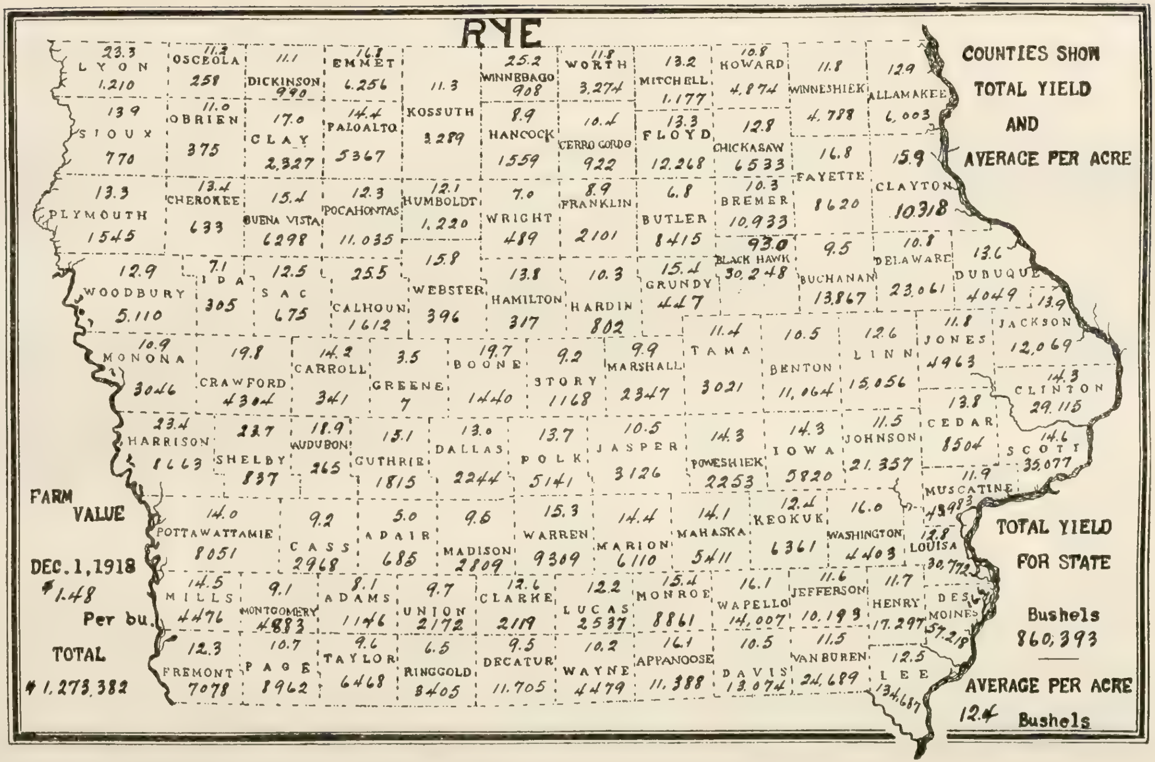
Acreage, yield per acre and total yield of rye, tame hay, wild hay and potatoes and acreage and total yield of alfalfa and flax seed, by counties, for the year 1918.

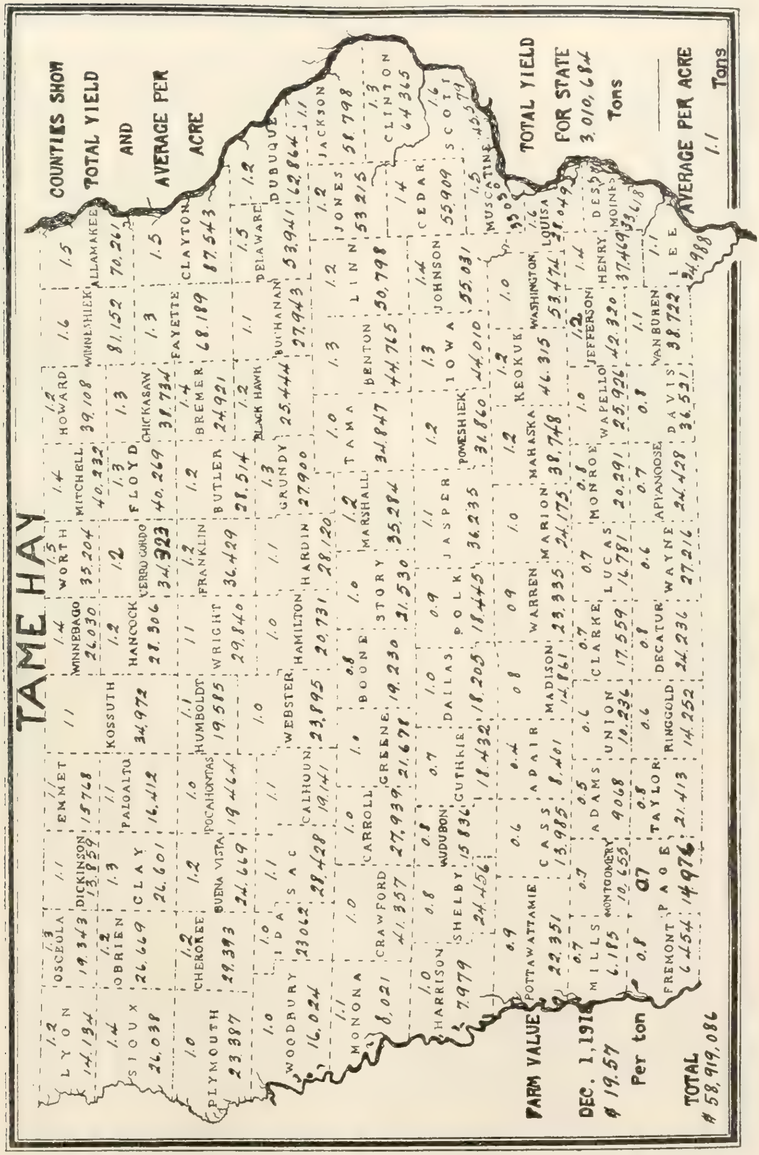
Counties	Rye			Hay (tame)			Hay (wild)			Alfalfa		Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Adair	136	5.0	685	18,803	.4	8,401	1,829	1.0	1,913	78	92	732	25.4	18,643	--------	--------
Adams	142	8.1	1,146	18,215	.5	9,068	1,705	.9	1,611	365	386	422	41.7	17,590	--------	--------
Allamakee	464	12.9	6,003	47,634	1.5	70,261	1,184	1.8	2,125	2	10	1,086	126.4	137,276	40	355
Appanoose	797	16.1	11,388	37,189	.7	24,428	816	1.5	1,205	38	66	342	48.3	16,524	--------	--------
Audubon	14	18.9	265	20,980	.8	15,836	1,477	1.3	1,918	979	2,092	717	45.8	32,855	--------	--------
Benton	1,051	10.5	11,064	35,529	1.3	44,765	2,090	1.1	2,382	82	190	999	70.3	70,267	--------	--------
Black Hawk	3,256	9.3	30,248	20,363	1.2	25,444	8,366	1.1	9,504	42	49	1,347	74.0	99,765	21	125
Boone	73	19.7	1,440	24,215	.8	19,230	7,268	.9	6,155	256	724	372	41.2	15,324	91	810
Bremer	1,058	10.3	10,933	18,295	1.4	24,921	20,945	1.2	24,356	51	125	1,247	75.2	93,736	--------	--------
Buchanan	1,456	9.5	13,867	26,019	1.1	27,943	11,553	.9	11,203	24	34	896	70.1	62,818	10	15
Buena Vista	408	15.4	6,298	20,738	1.2	24,669	6,892	1.1	7,309	573	1,313	1,064	72.1	76,713	59	494
Butler	1,262	6.8	8,415	24,659	1.2	28,514	10,543	1.0	11,313	11	24	1,347	68.0	91,683	5	25
Calhoun	63	25.5	1,612	18,204	1.1	19,141	3,056	.9	2,708	209	384	479	58.8	28,162	15	158
Carroll	24	14.2	341	27,476	1.0	27,939	6,545	1.1	7,271	308	671	1,586	56.7	90,061	--------	--------
Cass	321	9.2	2,968	22,403	.6	13,985	881	1.0	920	482	692	829	25.9	21,506	--------	--------
Cedar	618	13.8	8,504	41,309	1.4	55,909	129	1.2	160	78	186	761	62.9	47,867	--------	--------
Cerro Gordo	89	10.4	922	28,464	1.2	34,323	9,045	1.0	8,906	48	86	1,376	96.5	132,990	206	1,633
Cherokee	48	13.4	633	24,381	1.2	29,393	7,520	1.1	8,478	2,206	4,902	1,034	86.8	89,716	6	60
Chickasaw	512	12.8	6,533	29,772	1.3	38,734	12,633	1.1	13,744	--------	--------	1,119	86.4	96,807	377	3,819
Clarke	168	12.6	2,119	25,910	.7	17,559	74	.8	58	24	43	217	45.2	9,807	--------	--------
Clay	137	17.0	2,327	21,247	1.3	26,601	11,539	1.0	11,974	449	1,067	776	90.5	70,240	333	2,502
Clayton	645	15.9	10,318	60,219	1.5	87,543	1,113	1.3	1,431	23	68	1,716	109.5	187,886	--------	--------
Clinton	2,033	14.3	29,115	50,292	1.3	64,365	1,675	1.2	1,994	117	371	849	71.8	60,975	--------	--------
Crawford	217	19.8	4,304	41,643	1.0	41,357	4,824	1.7	7,965	4,126	9,172	1,317	67.5	88,834	--------	--------
Dallas	172	13.0	2,244	18,833	1.0	18,205	2,063	.9	1,851	490	940	311	37.8	11,757	--------	--------
Davis	1,244	10.5	13,074	46,130	.8	36,521	28	.7	22	32	56	439	75.9	33,333	--------	--------
Decatur	1,231	9.5	11,705	30,227	.8	24,236	218	1.1	257	147	194	687	18.2	12,521	--------	--------
Delaware	2,142	10.8	23,061	36,669	1.5	53,941	5,764	1.0	5,837	22	54	946	81.5	77,135	--------	--------
Des Moines	3,454	16.6	57,218	22,633	1.5	33,618	30	.8	23	267	696	826	92.2	75,834	--------	--------

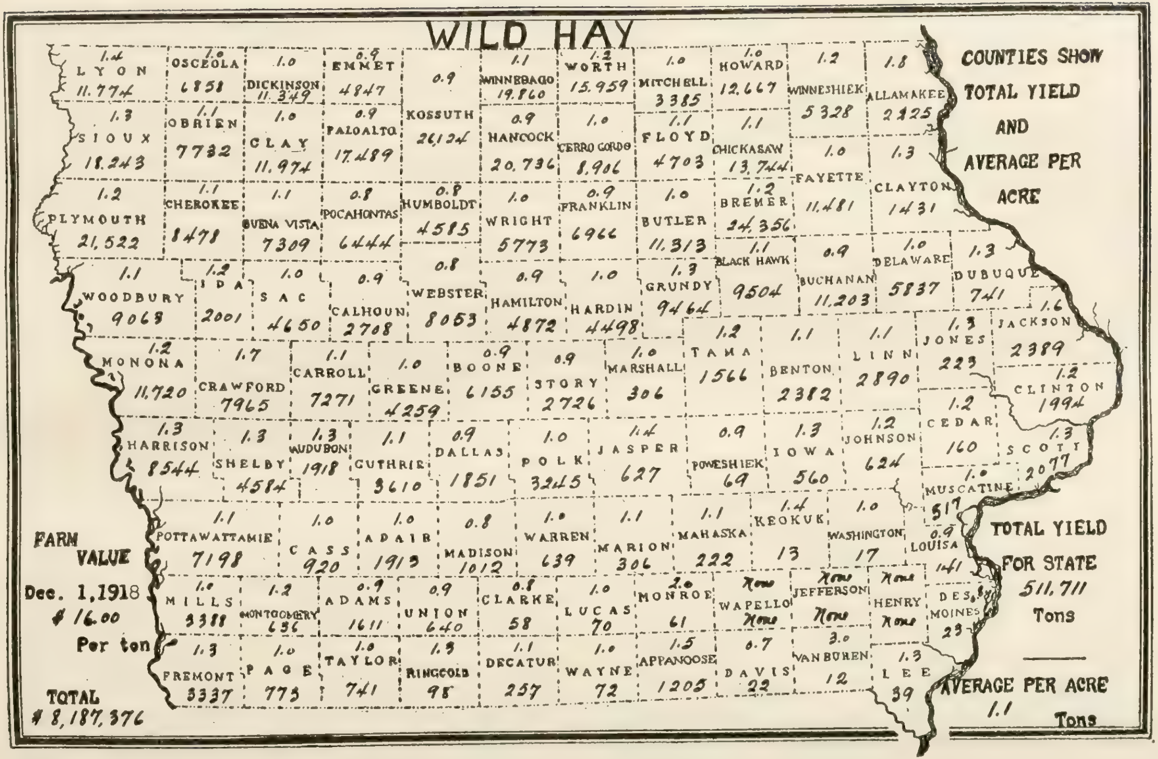
TABLE NO. 3—Continued.

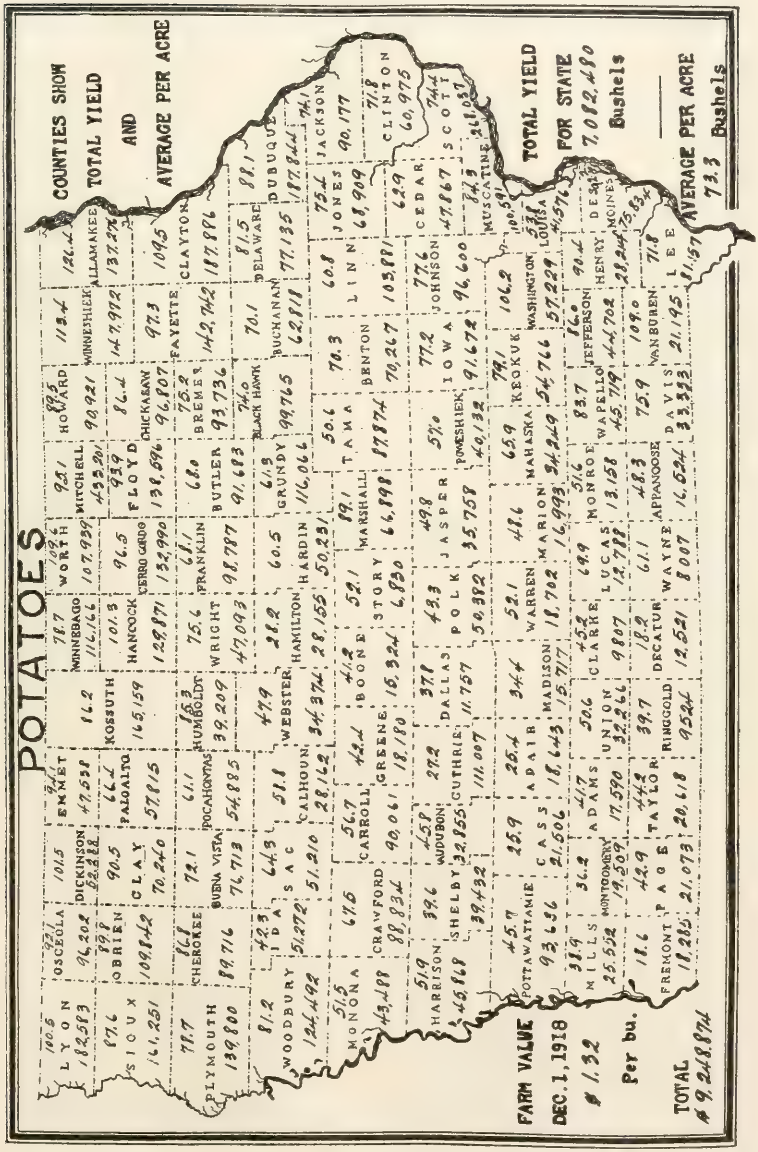
Counties	Rye			Hay (tame)			Hay (wild)			Alfalfa		Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Dickinson	89	11.1	990	12,420	1.1	13,859	11,628	1.0	11,349	167	412	515	101.5	52,288	689	4,769
Dubuque	297	13.6	4,049	53,621	1.2	62,864	577	1.3	741	58	132	2,132	88.1	187,844	--------	--------
Emmet	373	16.8	6,256	14,748	1.1	15,768	5,450	.9	4,847	106	244	505	94.1	47,538	737	5,941
Fayette	512	16.8	8,620	53,857	1.3	68,189	11,286	1.0	11,481	3	7	1,466	97.3	142,742	73	477
Floyd	916	13.3	12,268	30,812	1.3	40,269	4,262	1.1	4,703	48	840	1,476	93.9	138,596	429	2,349
Franklin	236	8.9	2,101	29,727	1.2	36,429	7,676	.9	6,966	23	45	1,451	68.1	98,787	63	261
Fremont	574	12.3	7,078	7,770	.8	6,454	2,479	1.3	3,337	7,791	15,383	406	18.6	18,285	--------	--------
Greene	2	3.5	7	21,647	1.0	21,678	4,327	1.0	4,259	58	101	429	42.4	18,180	17	140
Grundy	29	15.4	447	20,915	1.3	27,900	7,082	1.3	9,464	--------	--------	1,893	61.3	116,066	--------	--------
Guthrie	120	15.1	1,815	25,579	.7	18,432	3,290	1.1	3,610	228	469	405	27.2	111,007	--------	--------
Hamilton	23	13.8	317	20,531	1.0	20,731	5,430	.9	4,872	128	240	998	28.2	28,155	22	235
Hancock	175	8.9	1,559	23,979	1.2	28,306	21,632	.9	20,736	81	193	1,282	101.3	129,871	390	2,522
Hardin	78	10.3	802	25,846	1.1	28,120	4,610	1.0	4,498	100	228	830	60.5	50,231	26	248
Harrison	370	23.4	8,663	8,113	1.0	7,979	6,749	1.3	8,544	13,039	26,733	883	51.9	45,868	--------	--------
Henry	1,474	11.7	17,297	26,680	1.4	37,469	--------	--------	--------	72	199	312	90.4	28,214	--------	--------
Howard	451	10.8	4,874	31,760	1.2	39,108	12,531	1.0	12,667	6	10	1,016	89.5	90,921	1,075	9,087
Humboldt	101	12.1	1,220	17,540	1.1	19,585	5,736	.8	4,585	186	272	451	85.3	39,209	37	343
Ida	43	7.1	305	22,106	1.0	23,062	1,671	1.2	2,001	1,500	3,086	1,211	42.3	51,272	24	136
Iowa	405	14.3	5,820	34,311	1.3	44,010	425	1.3	560	28	73	1,187	77.2	91,672	--------	--------
Jackson	869	13.9	12,069	54,338	1.1	58,798	1,473	1.6	2,389	66	152	1,217	74.1	90,177	--------	--------
Jasper	299	10.5	3,126	33,424	1.1	36,235	602	1.4	627	90	202	718	49.8	35,758	--------	--------
Jefferson	878	11.6	10,193	34,552	1.2	42,320	--------	--------	--------	44	77	520	86.0	44,702	--------	--------
Johnson	1,859	11.5	21,357	39,588	1.4	55,031	539	1.2	624	79	113	1,245	77.6	96,600	--------	--------
Jones	419	11.8	4,963	43,831	1.2	53,215	173	1.3	223	41	105	914	75.4	68,909	--------	--------
Keokuk	513	12.4	6,361	37,180	1.2	46,315	9	1.4	13	26	73	692	79.1	54,766	24	241
Kossuth	292	11.3	3,289	32,691	1.1	34,972	30,302	.9	26,124	213	515	1,915	86.2	165,159	2,877	21,729
Lee	10,792	12.5	134,687	31,356	1.1	34,988	29	1.3	39	207	596	1,131	71.8	81,157	--------	--------
Linn	1,190	12.6	15,056	42,966	1.2	50,798	2,667	1.1	2,890	136	367	1,708	60.8	103,881	--------	--------
Louisa	2,406	12.8	30,772	17,593	1.6	28,049	160	.9	141	91	180	772	53.8	41,576	--------	--------
Lucas	208	12.2	2,537	24,568	.7	16,781	69	1.0	70	54	109	183	69.9	12,788	--------	--------
Lyon	52	23.3	1,210	12,165	1.2	14,134	8,624	1.4	11,774	2,406	5,524	1,816	100.5	182,583	42	419
Madison	294	9.5	2,809	19,759	.8	14,861	1,184	.8	1,012	171	339	457	34.4	15,717	--------	--------
Mahaska	384	14.1	5,411	30,753	1.2	38,748	209	1.1	222	102	210	518	65.9	34,249	--------	--------

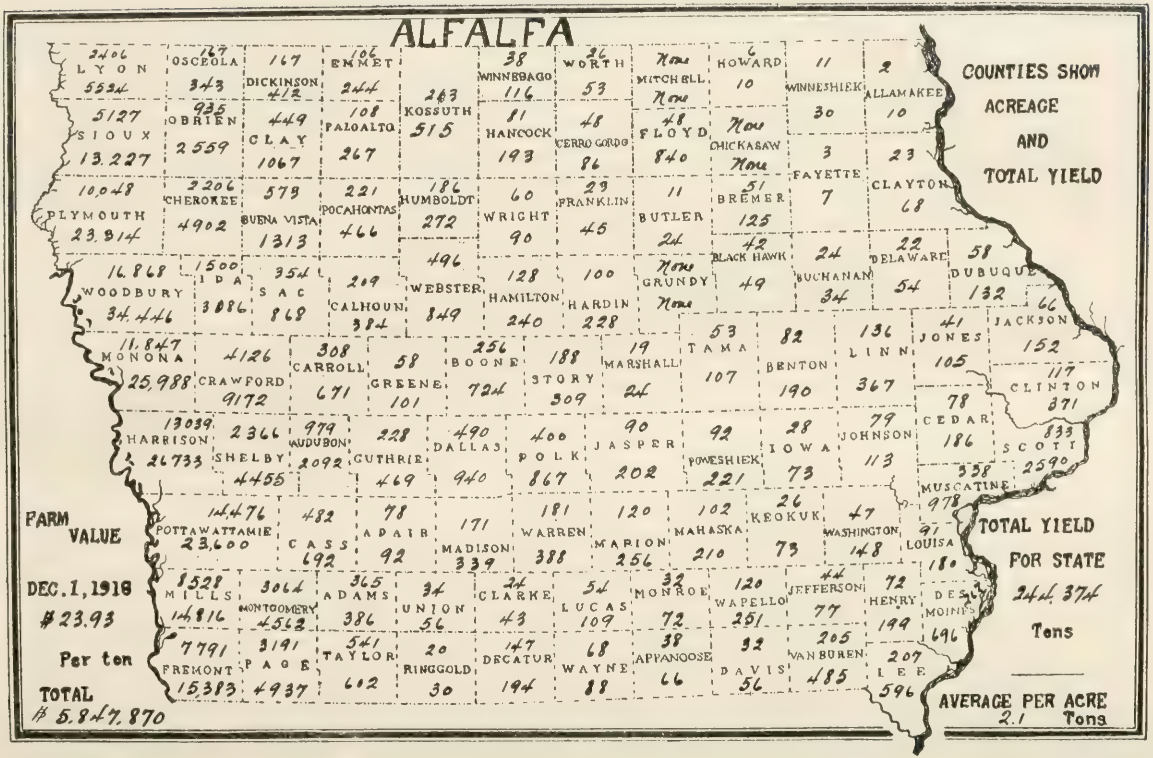
Marion	424	14.4	6,110	25,200	1.0	24,175	289	1.1	306	120	256	350	48.6	16,993	------	------
Marshall	237	9.9	2,347	29,163	1.2	35,284	293	1.0	306	19	24	751	89.1	66,898	------	------
Mills	308	14.5	4,476	8,368	.7	6,185	3,583	1.0	3.388	8,528	14,816	656	38.9	25,552	------	------
Mitchell	89	13.2	1,177	28,312	1.4	40,232	3,391	1.0	3,385	------	------	4,554	95.1	433,201	1,012	10,226
Monona	277	10.9	3,046	7,610	1.1	8,021	9,572	1.2	11,720	11,847	25,988	844	51.5	43,488	28	807
Monroe	574	15.4	8,861	25,797	.8	20,291	34	2.0	61	32	72	255	51.6	13,158	------	------
Montgomery	523	9.1	4,883	16,421	.7	10,655	540	1.2	636	3,064	4,562	538	36.2	19,509	------	------
Muscatine	3,711	11.9	43,983	22,621	1.5	33,030	507	1.0	517	338	978	1,193	84.3	100,591	------	------
O'Brien	34	11.0	375	21,415	1.2	26,669	6,886	1.1	7,732	935	2,559	1,223	89.8	109,842	123	1,000
Osceola	23	11.2	258	15,392	1.3	19,343	6,696	1.0	6,858	167	343	1,044	92.1	96,202	392	2,201
Page	841	10.7	8,962	21,857	.7	14,976	737	1.0	773	3,191	4,937	492	42.9	21,073	------	------
Palo Alto	374	14.4	5,367	15,423	1.1	16,412	18,796	.9	17,489	108	267	871	66.4	57,815	1,237	11,038
Plymouth	116	13.3	1,545	22,278	1.0	23,387	18,060	1.2	21,522	10,048	23,314	1,777	78.7	139,800	17	180
Pocahontas	894	12.3	11,035	19,382	1.0	19,464	8,057	.8	6,444	221	466	898	61.1	54,885	17	188
Polk	376	13.7	5,141	18,927	.9	18,445	2,992	1.0	3,245	400	867	1,163	43.3	50,382	------	------
Pottawattamie	576	14.0	8,051	24,746	.9	22,351	6,281	1.1	7,198	14,476	23,600	2,051	45.7	93,636	------	------
Poweshiek	157	14.3	2,253	27.337	1.2	31,860	74	.9	69	92	221	704	57.0	40,132	------	------
Ringgold	527	6.5	3,405	27,971	.6	14,252	76	1.3	98	20	30	240	39.7	9,524	------	------
Sac	54	12.5	675	24,916	1.1	28,428	4,658	1.0	4,650	354	868	796	64.3	51,210	20	80
Scott	2,399	14.6	35,077	29,376	1.6	45,579	1,656	1.3	2,077	833	2,590	3,602	74.4	268,037	------	------
Shelby	35	23.7	837	28,368	.8	24,456	3,620	1.3	4,584	2,366	4,455	994	39.6	39,432	------	------
Sioux	56	13.9	770	18,315	1.4	26,038	14,124	1.3	18,243	5,127	13,227	1,841	87.6	161,251	32	110
Story	127	9.2	1,168	22,181	1.0	21,530	2,913	0.9	2,726	188	309	131	52.1	6,830	62	620
Tama	266	11.4	3,021	34,862	1.0	34,847	1,308	1.2	1,566	53	107	1,738	50.6	87,874	------	------
Taylor	676	9.6	6,468	28,524	.8	21,413	738	1.0	741	541	602	466	44.2	20,618	------	------
Union	225	9.7	2,172	16,989	.6	10,236	663	.9	640	34	56	638	50.6	32,266	------	------
Van Buren	2,140	11.5	24,689	35,535	1.1	38,722	4	3.0	12	205	485	194	109.0	21,195	10	150
Wapello	868	16.1	14,007	26,482	1.0	25,926	------	------	------	120	251	546	83.7	45,719	------	------
Warren	610	15.3	9,309	25,816	.9	23,335	644	1.0	639	181	388	359	52.1	18,702	------	------
Washington	275	16.0	4,403	35,774	1.0	53,474	13	1.0	17	47	148	539	106.2	57,229	------	------
Wayne	438	10.2	4,479	40,786	.6	27,216	57	1.0	72	68	88	131	61.1	8,007	------	------
Webster	25	15.8	396	23,935	1.0	23,895	9,821	.8	8,053	496	849	718	47.9	34,374	16	150
Winnebago	36	25.2	908	18,116	1.4	26,030	18,144	1.1	19,860	38	116	1,419	78.7	116,166	1,490	12,228
Winneshiek	405	11.8	4,788	52,126	1.6	81,152	4,442	1.2	5,328	11	30	1,305	113.4	147,972	506	4,236
Woodbury	394	12.9	5,110	16,344	1.0	16,024	8,386	1.1	9,063	16,868	34,446	1,534	81.2	124,492	------	------
Worth	278	11.8	3,274	23,141	1.5	35,204	13,408	1.2	15,959	26	53	985	109.6	107,939	2,106	19,120
Wright	69	7.0	489	26,164	1.1	29,840	5,432	1.0	5,773	60	90	623	75.6	47,093	217	1,850
Grand total	69,395	12.4	860,393	2,701,147	1.1	3,010,684	481,581	1.1	511,711	120,099	244,374	96,656	73.3	7,082,480	14,973	123,077


RYE
COUNTIES SHOW
TOTAL YIELD
AND
AVERAGE PER ACRE
23.3 LYON 1.210
11.2 OSCEOLA 258
11.1 DICKINSON 990
16.8 EMMET 6.256
11.3 KOSSUTH 3.289
25.2 WINNEBAGO 908
11.8 WORTH 3.274
13.2 MITCHELL 1.177
10.8 HOWARD 4.874
11.8 WINNESHIEK 4.788
12.9 ALLAMAKEE 6,003
13.9 SIOUX 770
11.0 OBRIEN 375
17.0 CLAY 2,327
14.4 PALOALTO 5367
8.9 HANCOCK 1559
10.4 CERRO GORDO 922
13.3 FLOYD 12.268
12.8 CHICKASAW 6533
16.8 FAYETTE 8620
15.9 CLAYTON 10318
13.3 PLYMOUTH 1545
13.4 CHEROKEE 633
15.4 BUENA VISTA 6298
12.3 POCAHONTAS 11.035
12.1 HUMBOLDT 1.220
7.0 WRIGHT 489
8.9 FRANKLIN 2101
6.8 BUTLER 8415
10.3 BREMER 10.933
12.9 WOODBURY 5.110
7.1 IDA 305
12.5 SAC 675
25.5 CALHOUN 1612
15.8 WEBSTER 396
13.8 HAMILTON 317
10.3 HARDIN 802
15.4 GRUNDY 447
93.0 BLACK HAWK 30.248
9.5 BUCHANAN 13.867
10.8 DELAWARE 23.061
13.6 DUBUQUE 4049
13.9 JACKSON 12,069
10.9 MONONA 3046
19.8 CRAWFORD 4304
14.2 CARROLL 341
3.5 GREENE 7
19.7 BOONE 1440
9.2 STORY 1168
9.9 MARSHALL 2347
11.4 TAMA 3021
10.5 BENTON 11.064
12.6 LINN 15.056
11.8 JONES 4963
14.3 CLINTON 29.115
23.4 HARRISON 1663
22.7 SHELBY 837
18.9 AUDUBON 265
15.1 GUTHRIE 1815
13.0 DALLAS 2244
13.7 POLK 5141
10.5 JASPER 3126
14.3 POWESHIEK 2253
14.3 IOWA 5820
11.5 JOHNSON 21.357
13.8 CEDAR 8504
14.6 SCOTT 35.077
11.9 MUSCATINE 43983
FARM VALUE
DEC. 1, 1918
$1.48
Per bu.
TOTAL
$1.273.382
14.0 POTTAWATTAMIE 8051
9.2 CASS 2968
5.0 ADAIR 685
9.6 MADISON 2809
15.3 WARREN 9309
14.4 MARION 6110
14.1 MAHASKA 5411
12.4 KEOKUK 6361
16.0 WASHINGTON 4403
12.8 LOUISA 30,772
14.5 MILLS 4476
9.1 MONTGOMERY 4883
8.1 ADAMS 1146
9.7 UNION 2172
12.6 CLARKE 2119
12.2 LUCAS 2537
15.4 MONROE 8861
16.1 WAPELLO 14,007
11.6 JEFFERSON 10.199
11.7 HENRY 17.297
DES MOINES 57.218
12.3 FREMONT 7078
10.7 PAGE 8962
9.6 TAYLOR 6468
6.5 RINGGOLD 8405
9.5 DECATUR 11.705
10.2 WAYNE 4479
16.1 APPANOOSE 11.388
10.5 DAVIS 13.074
11.5 VAN BUREN 24.689
12.5 LEE 134,687
TOTAL YIELD
FOR STATE
Bushels
860,393
AVERAGE PER ACRE
12.4 Bushels


TAME HAY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 3,010,684 Tons
AVERAGE PER ACRE 1.1 Tons
FARM VALUE DEC. 1, 1918 $19.57 Per ton
TOTAL $58,919,086
LYON 14,134 1.2
OSCEOLA 19,343 1.3
DICKINSON 13,959 1.1
EMMET 15,768 1.1
KOSSUTH 34,972 1.1
WINNEBAGO 24,030 1.4
WORTH 35,204 1.5
MITCHELL 40,232 1.4
HOWARD 39,108 1.2
WINNESHIEK 81,152 1.6
ALLAMAKEE 70,261 1.5
SIOUX 26,038 1.4
OBRIEN 26,669 1.2
CLAY 26,601 1.3
PALOALTO 16,412 1.1
HANCOCK 28,306 1.2
CERRO GORDO 34,923 1.2
FLOYD 40,269 1.3
CHICKASAW 38,734 1.3
FAYETTE 68,189 1.3
CLAYTON 87,543 1.5
PLYMOUTH 23,387 1.0
CHEROKEE 29,393 1.2
BUENA VISTA 24,669 1.2
POCAHONTAS 19,464 1.0
HUMBOLDT 19,585 1.1
WRIGHT 29,840 1.1
FRANKLIN 36,429 1.2
BUTLER 28,514 1.2
BREMER 24,921 1.4
BLACK HAWK 25,444 1.2
BUCHANAN 27,943 1.1
DELAWARE 53,941 1.5
DUBUQUE 62,864 1.2
WOODBURY 16,024 1.0
IDA 23,062 1.0
SAC 28,428 1.1
CALHOUN 19,141 1.1
WEBSTER 23,895 1.0
HAMILTON 20,731 1.0
HARDIN 28,120 1.1
GRUNDY 27,900 1.3
TAMA 34,847 1.0
BENTON 44,765 1.3
LINN 50,798 1.2
JONES 53,215 1.2
JACKSON 58,798 1.1
CLINTON 64,365 1.3
MONONA 8,021 1.1
CRAWFORD 41,357 1.0
CARROLL 27,939 1.0
GREENE 21,678 1.0
BOONE 19,230 0.8
STORY 21,530 1.0
MARSHALL 35,284 1.2
HARRISON 7,979 1.0
SHELBY 24,456 0.8
AUDUBON 15,836 0.8
GUTHRIE 18,432 0.7
DALLAS 18,205 1.0
POLK 18,445 0.9
JASPER 36,235 1.1
POWESHIEK 31,860 1.2
IOWA 44,010 1.3
JOHNSON 55,031 1.4
CEDAR 55,909 1.4
SCOTT 45,574 1.6
MUSCATINE 35,050 1.5
POTTAWATTAMIE 22,351 0.9
CASS 13,985 0.6
ADAIR 8,401 0.4
MADISON 14,861 0.8
WARREN 23,335 0.9
MARION 24,175 1.0
MAHASKA 38,748 1.2
KEOKUK 46,315 1.2
WASHINGTON 53,474 1.0
LOUISA 28,049 1.6
MILLS 6,185 0.7
MONTGOMERY 10,655 0.7
ADAMS 9,068 0.5
UNION 10,236 0.6
CLARKE 17,559 0.7
LUCAS 16,781 0.7
MONROE 20,291 0.8
WAPELLO 25,926 1.0
JEFFERSON 42,320 1.2
HENRY 37,469 1.4
DES MOINES 33,618
FREMONT 6,454 0.8
PAGE 14,976 0.7
TAYLOR 21,413 0.8
RINGGOLD 14,252 0.6
DECATUR 24,236 0.8
WAYNE 27,216 0.6
APPANOOSE 24,428 0.7
DAVIS 36,521 0.8
VAN BUREN 38,722 1.1
LEE 34,988 1.1


WILD HAY
1.4 LYON 11.774
1.0 OSCEOLA 6858
1.0 DICKINSON 11.349
0.9 EMMET 4847
0.9 KOSSUTH 26,124
1.1 WINNEBAGO 19.860
1.2 WORTH 15.959
1.0 MITCHELL 3385
1.0 HOWARD 12.667
1.2 WINNESHIEK 5328
1.8 ALLAMAKEE 2225
1.3 SIOUX 18.243
1.1 OBRIEN 7732
1.0 CLAY 11.974
0.9 PALOALTO 17.489
0.9 HANCOCK 20.736
1.0 CERRO GORDO 8.906
1.1 FLOYD 4703
1.1 CHICKASAW 13.744
1.0 FAYETTE 11.481
1.3 CLAYTON 1431
1.2 PLYMOUTH 21,522
1.1 CHEROKEE 8478
1.1 BUENA VISTA 7309
0.8 POCAHONTAS 6444
0.8 HUMBOLDT 4585
1.0 WRIGHT 5773
0.9 FRANKLIN 6966
1.0 BUTLER 11.313
1.2 BREMER 24.356
1.1 BLACK HAWK 9504
0.9 BUCHANAN 11.203
1.0 DELAWARE 5837
1.3 DUBUQUE 741
1.1 WOODBURY 9069
1.2 IDA 2001
1.0 SAC 4650
0.9 CALHOUN 2708
0.8 WEBSTER 8053
0.9 HAMILTON 4872
1.0 HARDIN 4498
1.3 GRUNDY 9464
1.2 TAMA 1566
1.1 BENTON 2382
1.1 LINN 2890
1.3 JONES 223
1.6 JACKSON 2389
1.2 MONONA 11,720
1.7 CRAWFORD 7965
1.1 CARROLL 7271
1.0 GREENE 4259
0.9 BOONE 6155
0.9 STORY 2726
1.0 MARSHALL 306
1.2 CLINTON 1994
1.3 HARRISON 8544
1.3 SHELBY 4584
1.3 AUDUBON 1918
1.1 GUTHRIE 3610
0.9 DALLAS 1851
1.0 POLK 3245
1.4 JASPER 627
0.9 POWESHIEK 69
1.3 IOWA 560
1.2 JOHNSON 624
1.2 CEDAR 160
1.3 SCOTT 2077
1.0 MUSCATINE 517
1.1 POTTAWATTAMIE 7198
1.0 CASS 920
1.0 ADAIR 1913
0.8 MADISON 1012
1.0 WARREN 639
1.1 MARION 306
1.1 MAHASKA 222
1.4 KEOKUK 13
1.0 WASHINGTON 17
0.9 LOUISA 141
1.0 MILLS 3388
1.2 MONTGOMERY 636
0.9 ADAMS 1611
0.9 UNION 640
0.8 CLARKE 58
1.0 LUCAS 70
2.0 MONROE 61
None WAPELLO None
None JEFFERSON None
None HENRY None
DES MOINES 23
1.3 FREMONT 3337
1.0 PAGE 773
1.0 TAYLOR 741
1.3 RINGGOLD 98
1.1 DECATUR 257
1.0 WAYNE 72
1.5 APPANOOSE 1205
0.7 DAVIS 22
3.0 VAN BUREN 12
1.3 LEE 39
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 511,711 Tons
AVERAGE PER ACRE 1.1 Tons
FARM VALUE Dec. 1,1918 $ 16.00 Per ton
TOTAL $ 8,187,376


POTATOES
COUNTIES SHOW
TOTAL YIELD
AND
AVERAGE PER ACRE
LYON 100.5 182,583
OSCEOLA 92.1 96,202
DICKINSON 101.5 52,388
EMMET 92.1 47,558
KOSSUTH 81.2 165,159
WINNEBAGO 78.7 116,166
WORTH 109.6 107,939
MITCHELL 95.1 433,201
HOWARD 89.5 90,921
WINNESHIEK 113.4 147,972
ALLAMAKEE 121.4 137,272
SIOUX 87.6 161,251
OBRIEN 89.8 109,842
CLAY 90.5 70,240
PALOALTO 66.4 57,815
HANCOCK 101.3 129,871
CERRO GORDO 96.5 132,990
FLOYD 93.9 138,596
CHICKASAW 86.4 96,807
FAYETTE 97.3 142,742
CLAYTON 109.5 187,896
PLYMOUTH 79.7 139,800
CHEROKEE 86.8 89,716
BUENA VISTA 72.1 76,713
POCAHONTAS 61.1 54,885
HUMBOLDT 78.3 39,209
WRIGHT 75.6 47,093
FRANKLIN 68.1 98,787
BUTLER 68.0 91,683
BREMER 75.2 93,736
BLACK HAWK 74.0 99,765
BUCHANAN 70.1 62,818
DELAWARE 81.5 77,135
DUBUQUE 88.1 187,844
WOODBURY 81.2 124,492
IDA 42.3 51,272
SAC 64.3 51,210
CALHOUN 51.8 28,162
WEBSTER 49.9 34,374
HAMILTON 28.2 28,155
HARDIN 60.5 50,231
GRUNDY 61.3 116,066
TAMA 50.6 87,874
BENTON 70.3 70,267
LINN 60.8 103,881
JONES 75.4 68,909
JACKSON 74.1 90,177
MONONA 51.5 43,488
CRAWFORD 67.6 88,834
CARROLL 56.7 90,061
GREENE 42.4 18,180
BOONE 41.2 16,324
STORY 52.1 6,830
MARSHALL 89.1 66,898
IOWA 77.2 91,672
JOHNSON 77.6 96,600
CEDAR 62.9 47,867
CLINTON 71.8 60,975
SCOTT 74.4 268,037
HARRISON 51.9 45,868
SHELBY 39.6 39,432
AUDUBON 45.8 32,855
GUTHRIE 27.2 111,007
DALLAS 37.8 11,757
POLK 43.3 50,382
JASPER 49.8 35,758
POWESHIEK 57.0 40,132
MUSCATINE 87.3 100,591
POTTAWATTAMIE 45.7 93,636
CASS 25.9 21,506
ADAIR 25.4 18,643
MADISON 34.4 15,717
WARREN 52.1 18,702
MARION 48.6 16,993
MAHASKA 65.9 34,249
KEOKUK 79.1 54,766
WASHINGTON 106.2 57,229
LOUISA 53.8 41,576
MILLS 38.9 25,552
MONTGOMERY 36.2 19,509
ADAMS 41.7 17,590
UNION 50.6 32,266
CLARKE 45.2 9807
LUCAS 69.9 12,788
MONROE 51.6 13,158
WAPELLO 83.7 45,719
JEFFERSON 86.0 44,702
HENRY 90.4 28,244
DES MOINES 75.83
FREMONT 18.6 18,285
PAGE 42.9 21,073
TAYLOR 44.2 20,618
RINGGOLD 39.7 9524
DECATUR 18.2 12,521
WAYNE 61.1 8007
APPANOOSE 48.3 16,524
DAVIS 75.9 33,323
VAN BUREN 109.0 21,195
LEE 71.8 81,157
TOTAL YIELD
FOR STATE
7,082,490
Bushels
AVERAGE PER ACRE
73.3 Bushels
FARM VALUE
DEC. 1, 1918
$ 1.32
Per bu.
TOTAL
$ 9,348,874



ALFALFA

COUNTIES SHOW ACREAGE AND TOTAL YIELD
TOTAL YIELD FOR STATE 244,374 Tons
AVERAGE PER ACRE 2.1 Tons
FARM VALUE DEC. 1, 1918 $23.93 Per ton
TOTAL $5,847,870
LYON 2406 5524
OSCEOLA 127 343
DICKINSON 167 412
EMMET 106 244
KOSSUTH 263 515
WINNEBAGO 38 116
WORTH 26 53
MITCHELL None None
HOWARD 6 10
WINNESHIEK 11 30
ALLAMAKEE 2 10
SIOUX 5127 13,227
OBRIEN 935 2559
CLAY 449 1067
PALOALTO 108 267
HANCOCK 81 193
CERRO GORDO 48 86
FLOYD 48 840
CHICKASAW None None
FAYETTE 3 7
CLAYTON 23 68
PLYMOUTH 10,048 23,814
CHEROKEE 2206 4902
BUENA VISTA 578 1313
POCAHONTAS 221 466
HUMBOLDT 186 272
WRIGHT 60 90
FRANKLIN 29 45
BUTLER 11 24
BREMER 51 125
BLACK HAWK 42 49
BUCHANAN 24 34
DELAWARE 22 54
DUBUQUE 58 132
WOODBURY 16,868 34,446
IDA 1500 3086
SAC 354 868
CALHOUN 209 384
WEBSTER 496 849
HAMILTON 128 240
HARDIN 100 228
GRUNDY None None
JACKSON 66 152
MONONA 11,847 25,988
CRAWFORD 4126 9172
CARROLL 308 671
GREENE 58 101
BOONE 256 724
STORY 188 309
MARSHALL 19 24
TAMA 53 107
BENTON 82 190
LINN 136 367
JONES 41 105
CLINTON 117 371
HARRISON 13039 26733
SHELBY 2366 4455
AUDUBON 979 2092
GUTHRIE 228 469
DALLAS 490 940
POLK 400 867
JASPER 90 202
POWESHIEK 92 221
IOWA 28 73
JOHNSON 79 113
CEDAR 78 186
SCOTT 833 2590
MUSCATINE 338 978
POTTAWATTAMIE 14,476 23,600
CASS 482 692
ADAIR 78 92
MADISON 171 339
WARREN 181 388
MARION 120 256
MAHASKA 102 210
KEOKUK 26 73
WASHINGTON 47 148
LOUISA 91 180
MILLS 8528 14,816
MONTGOMERY 3064 4562
ADAMS 365 386
UNION 34 56
CLARKE 24 43
LUCAS 54 109
MONROE 32 72
WAPELLO 120 251
JEFFERSON 44 77
HENRY 72 199
DES MOINES 696
FREMONT 7791 15,383
PAGE 3191 4937
TAYLOR 541 612
RINGGOLD 20 30
DECATUR 147 194
WAYNE 68 88
APPANOOSE 38 66
DAVIS 32 56
VAN BUREN 205 485
LEE 207 596

TABLE NO. 4.

Number of horses all ages, mules all ages, January 1, 1919, and number swine July 1, 1918. Number of swine lost from hog cholera, 1918. Number dairy cows kept for milk, number other cattle not kept for milk and total number cattle all ages. Number sheep kept on farms, number shipped in for feeding. Number pounds wool clipped. Total number all varieties poultry on farms, January 1, 1919, and total number dozen eggs received by counties for the year 1918.

Counties	Horses (all ages)	Mules (all ages)	Swine on farms July 1, 1918	Swine lost by cholera 1918	Cattle			Sheep			Poultry	
					Cows and heifers kept for milk	Other cattle not kept for milk	Total cattle (all ages)	Sheep, all ages, on farms	Sheep shipped in for feeding	Total pounds wool clipped	No. all varieties on farms Jan. 1, 1919	No. dozen eggs received (estimated)
Adair	14,295	1,069	100,569	2,517	8,919	29,065	37,984	14,022	1,188	96,538	268,477	999,836
Adams	10,651	1,847	75,619	1,576	5,203	19,617	24,820	14,478	----------	93,828	204,086	805,310
Allamakee	10,871	79	66,963	----------	19,235	38,048	57,283	7,895	277	49,514	218,670	744,047
Appanoose	10,022	810	33,045	168	8,129	17.210	25,339	22,456	1,544	115,524	197,267	755,705
Audubon	12,219	454	104,244	2,777	8,409	32,797	41,206	2,398	3,222	11,483	244,335	1,314,119
Benton	18,222	613	132,357	1,775	10,869	41,951	52,820	7,879	3,248	35,982	308,016	1,029,490
Black Hawk	13,638	259	101,786	1,436	16,657	29,991	46,648	3,284	557	19,411	279,495	1,155,658
Boone	14,374	1,101	75,572	1,256	10,093	26,270	36,363	4,979	5,688	12,166	494,457	1,264,967
Bremer	11,599	72	71,912	313	20,096	32,104	42,200	2,231	146	9,487	279,779	1,086,307
Buchanan	13,276	356	89,637	728	13,989	30,488	44,477	6,680	2,746	31,446	272,576	1,176,811
Buena Vista	15,389	406	121,842	4,252	9,549	33,780	43,329	5,677	6,906	11,609	282,347	863,809
Butler	15,106	218	87,122	541	15,157	35,762	50,919	4,445	844	27,655	310,839	1,034,618
Calhoun	15,317	571	72,578	1,463	7,510	19,328	26,838	1,675	32	5,113	245,327	696,117
Carroll	13,196	649	110,679	980	9,907	34,459	44,366	2,807	4,127	13,063	294,140	919,976
Cass	14,811	1,557	119,442	6,659	7,528	30,020	37,548	14,859	2,408	109,623	247,616	916,350
Cedar	13,921	988	173,272	4,798	9,506	48,027	57,533	14,215	12,903	58,988	290,616	913,038
Cerro Gordo	13,408	247	80,942	1,955	13,791	34,750	48,541	4,827	374	19,091	293,017	661,351
Cherokee	14,397	340	151,603	4,055	7,354	43,505	50,859	5,036	1,819	12,248	245,556	646,363
Chickasaw	11,895	35	62,686	214	16,667	29,230	45,897	3,520	263	26,543	234,073	1,182,569
Clarke	9,538	703	48,965	304	5,426	22,674	28,100	7,799	590	56,900	197,661	774,145
Clay	13,163	247	96,452	1,714	8,950	38,300	47,250	7,072	2,657	26,007	198,107	699,764
Clayton	16,327	92	145,064	326	25,167	40,344	65,511	6,867	445	50,028	334,974	1,324,340
Clinton	16,488	187	154,270	1,019	16,067	50,001	66,068	6,075	5,379	26,185	322,182	980,632
Crawford	16,142	959	179,113	4,963	11,493	53,405	64,898	7,478	7,573	20,500	289,506	905,424
Dallas	15,194	1,280	112,191	4,963	8,466	26,105	34,571	13,089	16,224	68,751	313,660	1,233,169
Davis	10,615	682	37,433	46	8,516	18,663	27,179	63,915	1,459	310,113	271,712	1,111,834

TABLE NO. 4—Continued.

Counties	Horses (all ages)	Mules (all ages)	Swine on farms July 1, 1918	Swine lost by cholera 1918	Cattle			Sheep			Poultry	
					Cows and heifers kept for milk	Other cattle not kept for milk	Total cattle (all ages)	Sheep, all ages, on farms	Sheep shipped in for feeding	Total pounds wool clipped	No. all varieties on farms Jan. 1, 1919	No. dozen eggs received (estimated)
Decatur	11,504	999	54,646	324	7,207	23,732	30,939	14,283	413	73,043	249,644	986,858
Delaware	13,222	236	141,554	1,047	19,889	26,268	46,157	8,862	4,997	37,373	290,275	1,095,396
Des Moines	10,429	321	66,637	1,679	7,387	19,049	26,436	5,741	2,639	28,064	219,160	782,447
Dickinson	7,782	251	44,583	509	6,825	19,723	26,548	2,986	3,624	12,066	105,587	367,340
Dubuque	10,750	98	100,759	1,031	18,379	30,162	48,541	4,518	190	31,354	242,189	918,860
Emmet	8,846	174	49,464	2,001	7,446	21,902	29,348	2,581	585	16,230	132,951	429,736
Fayette	16,665	228	100,006	197	25,248	41,720	66,968	8,038	688	44,766	376,185	691,242
Floyd	12,438	132	73,186	1,239	11,338	30,873	42,211	6,112	1,452	40,073	236,489	910,244
Franklin	15,496	233	103,418	2,520	13,321	40,774	54,095	18,544	34,674	27,691	289,655	931,344
Fremont	9,657	2,088	79,781	4,147	5,542	17,985	23,527	1,224	817	4,939	171,757	681,132
Greene	15,935	807	82,703	1,819	7,528	29,070	36,598	5,192	2,311	24,181	291,169	1,573,675
Grundy	14,563	255	91,686	1,439	11,924	35,470	47,394	2,720	2,222	7,441	263,885	1,129,566
Guthrie	15,136	852	100,938	3,677	9,263	33,234	42,497	9,649	4,640	49,647	266,446	1,355,494
Hamilton	16,112	623	96,453	3,119	10,305	29,102	39,407	2,849	1,360	14,638	312,696	1,106,774
Hancock	16,529	263	70,207	1,369	12,447	28,429	40,876	3,870	2,961	10,930	243,992	866,712
Hardin	13,652	457	91,611	2,039	11,056	29,879	40,935	5,418	8,387	20,097	289,732	1,001,089
Harrison	13,882	1,750	107,702	4,589	9,421	24,698	32,255	25,192	9,553	105,545	235,366	1,205,228
Henry	10,797	623	66,110	901	6,169	26,086	34,119	10,355	11,193	15,198	292,324	1,100,721
Howard	10,279	113	49,386	185	14,956	29,747	44,703	3,732	75	21,495	170,667	678,222
Humboldt	9,351	337	74,365	1,966	7,725	20,368	28,093	1,858	350	11,732	177,588	671,988
Ida	11,449	550	117,245	3,560	5,141	35,637	40,778	5,312	12,750	9,141	194,057	710,540
Iowa	12,843	1,130	125,864	2,810	9,689	39,839	49,528	8,374	1,558	32,758	301,087	1,047,914
Jackson	11,242	223	96,293	90	15,978	40,397	56,375	4,614	119	27,215	240,452	828,406
Jasper	21,433	1,052	141,951	6,139	9,472	41,319	50,791	14,073	14,206	65,652	393,490	1,727,147
Jefferson	11,803	430	50,225	1,058	6,947	21,696	28,643	13,488	2,071	65,192	251,323	1,157,023
Johnson	15,182	1,155	148,587	6,448	7,936	39,319	47,255	10,748	1,997	57,994	332,550	1,699,103
Jones	12,092	296	106,356	779	14,671	36,902	51,573	4,364	4,660	30,188	247,214	1,164,988
Keokuk	16,371	1,303	104,692	1,693	8,295	28,970	37,265	14,152	2,539	55,288	344,589	1,311,837
Kossuth	23,884	437	138,687	7,185	19,084	47,792	66,876	2,709	4,135	17,704	454,355	1,611,871
Lee	11,291	674	43,075	469	8,917	20,090	29,007	25,407	1,291	155,370	242,032	1,008,834
Linn	17,456	662	154,996	1,754	16,373	36,669	53,042	9,522	3,894	41,685	365,405	1,353,028
Louisa	9,915	447	69,073	2,382	4,880	17,869	22,749	6,791	5,164	18,237	161,831	629,009
Lucas	9,281	978	46,207	704	6,266	22,951	29,217	19,045	3,854	116,329	197,690	802,585
Lyon	14,568	95	104,980	3,408	10,685	32,826	43,511	1,463	4,520	6,751	221,957	650,411

Madison	14,184	1,190	100,016	6,332	7,312	31,471	38,783	22,933	4,255	141,063	288,401	1,076,427
Mahaska	15,409	1,137	129,477	4,054	10,021	26,845	36,866	24,507	6,226	123,608	356,164	1,452,674
Marion	14,337	883	93,783	7,531	7,797	25,987	33,784	20,584	11,612	124,625	310,143	1,060,187
Marshall	14,998	759	112,396	1,219	10,232	30,575	40,807	13,870	13,944	42,669	265,420	964,480
Mills	9,743	1,081	72,263	2,784	5,267	15,145	20,412	5,394	7,661	8,275	164,346	547,936
Mitchell	11,417	95	63,108	----------	11,989	33,022	45,011	3,397	2,931	16,542	201,128	878,701
Monona	13,060	1,819	97,835	2,185	8,578	26,716	35,294	780	208	4,193	232,676	815,396
Monroe	7,839	766	33,505	141	7,067	18,367	25,434	12,109	556	61,676	154,470	733,417
Montgomery	10,065	1,215	104,450	2,820	5,589	23,394	28,983	5,478	6,365	22,344	200,652	749,346
Muscatine	9,916	572	85,879	2,380	7,072	21,039	28,111	2,805	1,744	13,438	207,039	1,188,287
O'Brien	14,364	287	113,015	2,490	11,623	41,366	52,989	3,982	6,569	9,685	235,045	865,555
Osceola	10,535	86	57,088	1,036	8,388	20,813	29,201	6,068	3,245	10,887	138,624	511,550
Page	11,866	1,785	108,117	1,860	8,032	30,210	38,242	6,219	2,055	28,018	240,823	977,051
Palo Alto	15,308	353	71,208	2,338	11,879	28,090	39,969	3,202	1,077	12,559	221,477	645,849
Plymouth	20,661	648	193,470	8,050	12,291	61,592	73,883	6,266	4,628	21,429	357,803	964,208
Pocahontas	16,392	666	88,171	4,701	9,309	22,738	32,047	5,393	2,614	16,908	291,450	954,232
Polk	14,069	939	69,852	3,483	9,548	19,389	28,937	7,357	6,624	21,872	269,044	1,013,297
Pottawattamie	21,343	2,699	198,412	8,294	12,451	49.122	61,573	6,703	5,300	39,741	415,394	1,167,118
Poweshiek	15,926	964	124,963	2,141	8,360	37,716	46,076	8,654	2,728	28,097	273,647	1,226,642
Ringgold	12,528	1,355	59,127	157	8,320	24,901	33,221	12,911	411	76,998	290,910	1,259,029
Sac	13,740	695	108,498	2,051	9,144	32,753	41,897	3,909	7,173	23,109	249,215	888,120
Scott	12,107	529	108,819	3,320	14,388	28,563	42,951	2,303	887	9,736	275,102	1,259,803
Shelby	17,080	851	151,794	2,645	7,860	48,939	56,799	4,274	6,163	9,355	281,112	1,101,763
Sioux	20,036	258	258,491	12,025	15,362	50,088	65,450	6,801	5,322	10,966	346,539	1,775,895
Story	16,146	845	81,658	3,155	9,601	26,224	35,825	4,240	9,517	10,075	342,313	1,163,715
Tama	18,344	552	141,152	2,683	11,204	63,004	74,208	10,125	6,268	45,673	359,173	1,263,066
Taylor	13,095	1,138	95,916	1,032	6,874	25.104	31,978	20,278	1,659	112,041	315,465	981,437
Union	10,558	720	58,945	629	6,478	22,318	28,796	9,716	2,146	45,038	208,053	893,286
Van Buren	10,149	929	44,295	134	7,182	20.097	27,279	43,171	1,866	264,750	328,025	1,137,557
Wapello	9,233	852	52,609	984	8,246	12,965	21,211	16,534	1,525	86,414	194,178	671,829
Warren	13,608	806	81,184	783	8,824	25,479	34,303	13,862	2,284	73,311	268,293	1,050,797
Washington	14,324	964	135,410	4,158	7,019	36,279	43,298	13,271	4,310	62,186	305,151	1,238,029
Wayne	12,708	1,565	60,612	513	7,634	25,553	33,187	22,873	3,353	125,786	245,193	855,164
Webster	16,981	613	78,073	1,598	15,107	22,111	37,218	2,680	48	10,959	287,683	935,574
Winnebago	10,060	153	63,768	607	13,414	24,477	37,891	2,516	661	13,409	201,947	730,774
Winneshiek	16,406	81	115,905	104	25,551	45,092	70,643	8,568	522	51,837	287,200	1,089,333
Woodbury	19,096	2,210	137,731	14,749	11,684	37,875	49,559	13,952	7,330	40,614	315,907	1,199,799
Worth	8,963	102	50,804	137	12,890	26,285	39,175	1,716	81	7,974	170,335	666,737
Wright	14,691	459	89,841	3,568	9,679	27.185	36,864	7,669	5,059	21,416	237,518	833,023
Grand total	1,347,194	69,714	9,594,924	243,945	1,059,629	3,055,330	4,114,959	926,504	395,435	4,463,139	26,277,336	99,169.596

TABLE NO. 5.

Acreage and total yield of sweet corn, pop corn, timothy and clover seed by counties for the year 1918.

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Total tons green corn gathered for canning	Acres	Total pounds	Acres	Total bushels	Acres	Total bushels
Adair	1	5	26	5,725	809	1,922	--------	--------
Adams	--------	--------	4	2,848	689	2,019	--------	--------
Allamakee	3	59	6	3,746	5,556	34,627	169	200
Appanoose	4	8	7	8,867	7,424	29,446	29	50
Audubon	466	984	--------	--------	397	1,002	158	247
Benton	4,680	12,114	--------	--------	644	3,106	150	248
Black Hawk	3,675	7,805	57	10,686	386	2,067	24	50
Boone	166	235	7	6,924	110	446	97	177
Bremer	1,524	3,556	8	3,561	190	750	9	52
Buchanan	1,018	2,105	62	12,524	701	3,431	16	13
Buena Vista	1,009	3,043	670	736,649	63	254	49	72
Butler	408	667	86	1,802	693	3,101	--------	--------
Calhoun	868	1,805	219	49,770	94	420	21	26
Carroll	--------	--------	570	367,662	253	835	280	269
Cass	1,101	1,285	37	3,900	184	562	630	594
Cedar	522	1,246	39	73,275	1,516	1,794	290	328
Cerro Gordo	16	33	36	40,389	531	2,057	55	48
Cherokee	32	30	151	65,160	151	827	112	167
Chickasaw	--------	--------	6	10,170	6,570	30,605	35	52
Clarke	8	17	6	1,423	3,013	9,824	16	7
Clay	--------	--------	404	322,845	896	3,336	--------	--------
Clayton	744	2,169	2	1,330	3,029	19,908	1,359	1,561
Clinton	12	29	3	1,910	560	3,028	128	145
Crawford	2	4	690	1,192,940	213	902	1,075	939
Dallas	1,337	1,912	24	15,865	87	313	266	335
Davis	13	27	5	9,569	11,226	43,484	393	722
Decatur	9	122	50	38,060	4,575	16,706	84	140
Delaware	658	1,064	7	9,169	1,034	5,386	49	55
Des Moines	12	22	4	6,382	601	4,163	3,916	5,363
Dickinson	4	8	72	60,070	566	2,258	--------	--------
Dubuque	438	816	--------	--------	990	5,389	473	485
Emmet	--------	--------	20	714	162	588	--------	--------
Fayette	578	1,879	3	4,210	5,376	28,474	72	92
Floyd	10	250	50	44,686	2,874	13,616	--------	--------
Franklin	1,277	2,382	9	6,241	374	1,739	29	44
Fremont	586	949	1	600	--------	--------	314	275
Greene	15	20	5	5,500	89	426	25	13
Grundy	--------	--------	154	188,402	190	1,191	52	290
Guthrie	80	148	313	214,852	2,085	5,357	456	498
Hamilton	194	392	46	65,962	155	766	32	39
Hancock	280	826	4	3,820	207	1,422	18	27
Hardin	6	10	138	26,410	72	187	10	3
Harrison	8	17	26	11,593	71	133	586	549
Henry	971	2,559	4	1,155	1,283	3,444	2,378	3,408
Howard	1	2	6	5,064	7,097	25,149	8	8
Humboldt	5	10	120	76,025	211	1,125	10	4
Ida	12	25	9,305	11,894,620	199	694	316	349
Iowa	1,042	2,553	1	1,630	10,834	41,512	1,239	2,249
Jackson	2	5	1	350	1,045	4,816	1,523	1,329
Jasper	325	1,687	231	231,674	417	1,392	1,560	2,762
Jefferson	8	8	10	8,160	2,147	9,415	3,376	3,996
Johnson	297	802	45	13,486	1,578	8,441	925	1,305
Jones	341	602	2	4,279	531	2,966	14	17
Keokuk	4	7	3	4,588	1,440	6,366	1,354	1,943
Kossuth	6	12	12	15,083	240	1,081	--------	--------
Lee	51	108	1	916	2,889	11,965	1,875	2,474
Linn	1,146	1,922	415	585,196	893	4,830	295	336
Louisa	1,071	2,514	4	6,764	582	3,376	472	665
Lucas	--------	--------	4	5,380	5,771	20,501	115	153
Lyon	2	2	4	3,880	98	436	29	35
Madison	122	181	--------	2	438	1,274	260	274
Mahaska	231	306	1	1,550	375	955	1,789	2,390
Marion	703	886	12	12,300	204	649	1,644	2,327
Marshall	1,714	4,961	60	110,570	471	1,912	285	424

TABLE NO. 5—Continued.

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Total tons green corn gathered for canning	Acres	Total pounds	Acres	Total bushels	Acres	Total bushels
Mills	10	8	12	3,048	14	14	366	322
Mitchell	--------	--------	17	7,060	3,864	18,713	8	4
Monona	59	118	317	186,175	64	157	463	698
Monroe	3	6	2	613	2,163	6,085	181	221
Montgomery	429	485	7	2,000	69	172	977	1,102
Muscatine	56	102	128	31,658	926	4,547	515	608
O'Brien	1	2	230	242,435	811	3,208	53	37
Osceola	--------	--------	79	869,933	735	2,429	38	85
Page	1	1	2	248	37	98	418	391
Palo Alto	3	10	104	124,230	123	483	4	8
Plymouth	32	15	131	175,515	85	429	310	365
Pocahontas	19	51	3	2,510	93	319	24	24
Polk	2,495	4,967	66	74,425	149	169	323	298
Pottawattamie	68	112	3	826	120	372	950	1,134
Poweshiek	821	2,036	260	246,578	3,215	13,026	785	1,389
Ringgold	--------	--------	4	1,960	2,223	6,832	35	46
Sac	910	2,642	11,350	17,313,809	237	956	71	91
Scott	44	64	23	41,526	424	2,421	1,130	1,161
Shelby	63	97	97	7,400	343	1,111	980	855
Sioux	--------	--------	60	86,385	77	329	138	15
Story	2,648	5,687	9	2,300	80	381	92	124
Tama	1,403	2,955	3	4,151	852	3,931	136	180
Taylor	--------	--------	2	1,620	942	2,750	6	8
Union	8	8	37	19,200	1,852	5,531	15	5
Van Buren	1	2	19	10,158	3,176	13,124	2,333	2,883
Wapello	53	81	--------	8	1,233	5,692	722	1,171
Warren	5	5	--------	------------	1,209	3,827	195	164
Washington	31	62	6	6,145	646	3,599	2,107	2,725
Wayne	--------	--------	1	2,203	16,699	53,564	173	432
Webster	10	20	119	65,990	109	639	30	42
Winnebago	880	2,726	8	7,056	332	1,566	--------	--------
Winneshiek	--------	--------	6	10,890	10,408	50,821	--------	--------
Woodbury	126	254	500	678,818	221	712	990	1,780
Worth	134	759	5	6,831	926	5,114	10	6
Wright	9	16	4	3,486	169	832	15	16
Grand total	40,140	90,485	27,882	36,856,073	158,775	660,119	45,537	59,013

TABLE NO. 6.

Comparative Table Showing Number of Swine Lost by Cholera in Iowa by Counties in 1918, 1917, 1916, 1915, and 1913.

Counties	Swine lost by cholera, 1918	Swine lost by cholera, 1917	Swine lost by cholera, 1916	Swine lost by cholera, 1915	Swine lost by cholera, 1913
Adair	2,517	2,652	2,679	5,791	32,151
Adams	1,576	1,437	2,510	6,378	12,080
Allamakee	---	7	17	86	993
Appanoose	168	587	159	803	1,933
Audubon	2,777	1,715	2,557	3,628	29,716
Benton	1,775	7,918	3,025	5,994	25,770
Black Hawk	1,436	2,375	1,061	5,422	26,480
Boone	1,256	774	2,765	1,706	26,810
Bremer	313	309	126	2,303	8,250
Buchanan	728	244	5	434	22,117
Buena Vista	4,252	1,408	5,114	3,482	68,286
Butler	541	277	553	1,261	37,211
Calhoun	1,463	1,360	1,865	1,578	23,755
Carroll	980	2,365	4,051	4,477	39,318
Cass	6,659	2,434	5,231	9,279	42,266
Cedar	4,798	4,723	5,281	12,407	42,729
Ceror Gordo	1,955	360	1,368	1,239	43,255
Cherokee	4,055	1,895	4,497	5,003	63,223
Chickasaw	214	---	111	2,007	16,595
Clarke	304	692	537	2,818	4,918
Clay	1,714	1,912	2,420	1,453	31,875
Clayton	326	---	654	760	1,700
Clinton	1,019	131	889	2,198	19,999
Crawford	4,963	5,343	9,354	9,648	71,865
Dallas	4,963	1,902	1,678	2,311	18,436
Davis	46	---	66	1,704	280
Decatur	324	294	835	2,901	1,237
Delaware	1,047	2,175	374	1,255	33,348
Des Moines	1,679	988	1,731	7,180	9,353
Dickinson	509	333	731	868	17,716
Dubuque	1,031	927	1,557	4,257	23,299
Emmet	2,001	978	1,679	1,873	18,505
Fayette	197	120	351	528	6,158
Floyd	1,239	832	470	882	18,046
Franklin	2,520	999	896	5,690	31,367
Fremont	4,147	3,622	2,836	7,065	7,271
Greene	1,819	3,556	1,829	1,790	26,568
Grundy	1,439	2,599	1,031	2,962	23,618
Guthrie	3,677	1,630	3,460	3,050	30,932
Hamilton	3,119	3,216	2,294	2,385	35,526
Hancock	1,369	285	284	1,656	38,672
Hardin	2,039	1,777	2,292	5,707	28,015
Harrison	4,589	2,243	4,084	7,872	20,122
Henry	901	675	977	5,033	2,861
Howard	185	5	60	1,073	7,223
Humboldt	1,966	1,142	3,129	2,372	46,225
Ida	3,560	3,634	3,031	4,168	52,358
Iowa	2,810	2,035	4,250	8,939	3,656
Jackson	90	180	322	1,453	3,502
Jasper	6,139	6,400	3,207	9,380	48,499
Jefferson	1,058	129	506	3,719	3,207
Johnson	6,448	3,079	4,519	14,139	17,646
Jones	779	1,883	1,007	4,563	9,470
Keokuk	1,693	658	2,131	13,659	20,620
Kossuth	7,185	2,429	2,707	2,757	78,295
Lee	469	143	354	3,860	6,978
Linn	1,754	1,124	1,463	3,186	24,196
Louisa	2,382	2,167	6,320	11,129	12,665
Lucas	704	32	203	2,523	1,001
Lyon	3,408	5,226	4,886	5,701	70,181
Madison	6,332	1,110	1,712	6,305	16,584
Mahaska	4,054	2,791	4,311	21,574	30,899
Marion	7,531	3,159	3,063	8,491	27,030

TABLE NO. 6—Continued.

Comparative Table Showing Number of Swine Lost by Cholera in Iowa by Counties in 1918, 1917, 1916, 1915, and 1913.

Counties	Swine lost by cholera, 1918	Swine lost by cholera, 1917	Swine lost by cholera, 1916	Swine lost by cholera, 1915	Swine lost by cholera, 1913
Marshall	1,219	2,000	4,642	6,454	48,293
Mills	2,784	1,879	2,153	4,249	16,632
Mitchell	----------	234	174	1,368	13,810
Monona	2,185	1,853	1,574	4,961	37,085
Monroe	141	86	33	1,313	1,644
Montgomery	2,820	2,816	2,461	6,882	28,403
Muscatine	2,380	718	2,372	4,276	11,702
O'Brien	2,490	2,179	4,761	2,635	58,865
Osceola	1,036	1,066	824	399	36,620
Page	1,860	4,181	3,711	15,192	30,809
Palo Alto	2,338	2,017	3,779	1,701	46,260
Plymouth	8,050	6,748	10,610	6,875	105,055
Pocahontas	4,701	1,469	3,469	2,318	28,651
Polk	3,483	3,276	3,117	4,648	20,937
Pottawattamie	8,294	9,542	12,164	21,376	42,065
Poweshiek	2,141	1,622	2,035	8,301	24,902
Ringgold	157	263	135	2,066	8,625
Sac	2,051	1,601	4,966	4,691	67,715
Scott	3,320	1,098	3,104	4,061	21,860
Shelby	2,645	2,593	3,462	7,120	25,118
Sioux	12,025	6,192	13,587	11,570	123,101
Story	3,155	2,458	4,032	3,118	27,672
Tama	2,683	3,897	3,175	8,148	31,407
Taylor	1,032	1,876	760	5,031	18,062
Union	629	978	1,015	3,585	7,377
Van Buren	134	5	712	2,785	2,844
Wapello	984	1,288	1,754	6,634	7,606
Warren	783	806	848	4,486	18,270
Washington	4,158	5,597	5,917	11,696	24,433
Wayne	513	89	222	3,245	10,487
Webster	1,598	499	2,284	1,697	40,381
Winnebago	607	494	186	2,179	14,639
Winneshiek	104	333	2,224	1,999	3,543
Woodbury	14,749	7,797	6,624	9,819	61,998
Worth	137	439	317	1,503	16,427
Wright	3,568	1,616	1,134	2,216	49,718
Total	243,945	188,909	247,802	476,712	2,709,876

PART XII

Statistical Tables of Iowa's Principal Farm Crops. Also Statistical Tables of the Principal Farm Crops and Live Stock by States, the United States and the World.

CORN CROPS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	41	230,633,200	$ .25	$ 57,658,300	5,625,200
1885	33	224,636,522	.23	51,666,400	6,803,834
1890	28	239,675,156	.41	98,266,814	8,550,827

CORN CROP—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	39	312,692,210	$ .14	$ 43,916,900	8,043,390
1897	29	239,452,150	.17	40,706,860	8,523,522
1898	34.5	289,214,850	.23	66,519,400	8,896,286
1899	36.3	306,852,710	.23	70,429,410	8,460,521
1900	40.3	345,055,040	.27	93,164,860	8,618,660
1901	26.2	227,908,850	.50	113,954,000	8,687,480
1902	34	296,950,230	.28	82,432,700	8,700,000
1903	31	230,511,310	.36	82,984,071	7,398,320
1904	36	323,853,330	.35	113,348,665	9,000,000
1905	37.2	345,871,840	.35	121,055,144	9,285,150
1906	41	388,836,252	.33	128,155,143	9,443,960
1907	29.6	246,898,460	.44	108,635,322	8,858,000
1908	35.9	301,373,150	.51	153,955,306	8,399,610
1909	34.6	308,036,868	.51	157,098,802	8,681,850
1910	39.8	334,374,428	.36	120,374,794	8,399,712
1911	32.9	281,366,600	.54	151,937,964	8,534,500
1912	45.8	421,368,400	.36	151,698,624	9,199,610
1913	34.9	329,343,000	.59	194,311,370	9,434,500
1914	39	363,689,600	.55	200,029,280	9,324,300
1915	30.0	285,433,000	.45	128,444,850	9,556,400
1916	35	331,582,186	.81	268,581,571	9,479,030
1917	35.8	371,639,819	.97	370,490,625	10,370,727
1918	34.1	317,544,351	1.23	390,579,552	9,309,234
Average for 23 years	35.3	313,036,896	$ .46	$ 145,774,140	8,895,859

WHEAT—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value Dec. 1st	Acreage
1880	10.5				36,099,760	$ .82	$ 29,501,803	3,437,948
1885	12				31,776,108	.61	19,383,426	2,648,009
1890	11.7				25,114,552	.78	19,589,350	2,092,896

WHEAT—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value Dec. 1st	Acreage
1896	13	17	7,047,235	3,351,550	10,398,785	$ .57	$ 6,020,000	739,245
1897	13.4	13	12,941,600	1,671,454	14,613,054	.74	10,813,650	1,222,974
1898	14.8	16.5	19,152,352	3,168,916	22,321,268	.53	11,602,000	1,484,682
1899	12.7	11	19,574,792	226,040	19,800,832	.58	10,701,490	1,559,931
1900	14.3	13.3	20,280,280	1,018,070	21,298,350	.60	12,799,370	1,492,630
1901	15.3	17.6	17,429,230	865,770	18,295,000	.60	10,965,000	1,188,239
1902	13	18	12,680,800	825,045	13,505,845	.53	7,062,640	1,021,281
1903	12.6	16.9	9,481,350	1,435,380	10,916,730	.67	7,167,643	837,422
1904	9.1	14.3	7,080,430	1,017,000	8,097,430	.89	7,042,809	846,070
1905	14.4	20.2	5,155,760	1,253,020	6,408,780	.72	4,614,321	420,068
1906	15	23	5,603,880	1,566,050	7,169,930	.64	4,579,697	443,810
1907	13	19.8	4,402,320	1,698,101	6,100,421	.82	4,974,302	424,407
1908	15.4	19.7	4,968,250	1,678,540	6,646,790	.86	5,716,239	408,614
1909	12.5	18.2	3,809,460	3,621,953	7,431,413	.90	6,688,272	502,762
1910	19.3	18.5	6,773,799	3,635,405	10,409,204	.86	8,951,915	546,179
1911	13.1	19.7	4,674,500	3,959,000	8,633,500	.89	7,683,715	559,272
1912	18.7	24.3	9,486,700	8,133,530	17,620,230	.77	13,554,135	840,360
1913	15.1	23.1	5,510,200	11,693,900	17,204,100	.77	13,136,953	871,040
1914	13	22	3,389,070	12,038,210	15,427,280	.95	14,862,788	799,435
1915	15.9	21.3	4,155,150	13,352,600	17,507,750	.84	14,614,535	888,960
1916	12.2	15.6	2,111,771	4,621,073	6,732,844	1.56	10,503,237	468,641
1917	19.2	14.6	3,177,998	2,211,817	5,389,725	1.95	10,509,963	315,923
1918	17.3	17.7	10,527,209	5,481,167	16,008,376	2.00	32,016,752	919,023
Average for 23 years	14.5	19.0	8,670,176	3,844,417	12,519,028	$ .88	$ 10,286,149	817,433

OATS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	35	42,288,800	$ .23	$ 9,496,424	1,179,680
1885	32.5	71,737,900	.21	15,064,959	2,207,320
1890	29	80,002,735	.38	30,401,039	2,758,715

OATS—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	26	73,450,000	$ .12	$ 8,814,000	2,825,000
1897	30	132,517,150	.16	21,211,380	4,405,782
1898	32	139,915,340	.21	29,383,220	4,299,243
1899	34.5	140,647,300	.19	26,722,980	4,069,557
1900	35	138,832,300	.20	27,766,460	3,991,690
1901	32	114,883,000	.35	40,209,230	3,799,220
1902	31	92,907,900	.24	22,297,000	3,770,624
1903	25.9	99,012,660	.30	29,703,798	3,822,822
1904	29.4	118,435,570	.26	30,793,284	4,018,980
1905	33.8	146,439,240	.25	36,609,810	4,177,545
1906	34	142,036,530	.27	38,349,878	4,166,800
1907	24.5	111,190,400	.39	43,364,256	4,536,170
1908	25.5	112,830,490	.43	48,517,110	4,431,650
1909	27	117,083,850	.35	40,979,348	4,312,184
1910	36	169,207,098	.27	45,685,916	4,697,749
1911	25.7	120,208,300	.41	59,285,403	4,660,500
1912	44.4	206,949,700	.27	55,876,419	4,665,100
1913	34.2	164,851,000	.34	56,049,340	4,824,400
1914	34	172,696,000	.41	70,805,360	5,154,200
1915	38.6	201,446,400	.32	64,462,848	5,214,900
1916	36.5	189,876,501	.49	93,039,485	5,199,269
1917	42.1	227,743,960	.61	138,923,815	5,410,031
1918	39.4	229,233,036	.64	146,709,144	5,822,869
Average for 23 years	32.6	146,191,032	$ .33	$ 51,111,282	4,446,795

BARLEY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	23	4,600,000	$ .42	$ 1,932,000	200,000
1885	27	5,737,095	.33	1,893,241	212,485
1890	24	3,664,368	.47	1,722,254	152,682

BARLEY—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	29	15,881,618	$ .20	$ 3,176,320	547,642
1897	25	14,076,850	.23	3,237,670	551,867
1898	27.5	14,138,000	.30	4,209,740	509,580
1899	25.6	14,719,310	.30	4,415,570	557,598
1900	25.3	12,695,200	.33	4,189,410	501,740
1901	24.2	14,654,410	.44	6,447,940	604,610
1902	25	15,380,910	.33	5,075,710	594,070
1903	24.7	12,179,790	.37	4,506,522	493,108
1904	25	12,317,710	.34	4,188,021	493,370
1905	27.5	15,566,770	.33	5,137,034	565,700
1906	26.5	14,858,830	.36	5,349,178	558,870
1907	24.6	9,893,330	.60	5,935,998	397,210
1908	26.7	10,629,660	.50	5,314,830	307,408
1909	17.5	10,352,040	.46	4,761,938	562,622
1910	25.9	8,614,541	.56	4,824,143	324,571
1911	22.9	7,197,090	.90	6,447,381	313,147
1912	32.5	9,587,760	.50	4,793,880	294,935
1913	23.8	8,756,300	.53	4,640,839	368,600
1914	26	11,423,310	.56	5,397,053	437,400
1915	30.6	8,591,881	.51	4,381,859	280,520
1916	28.2	7,467,049	.90	6,720,344	265,048
1917	34.6	10,578,090	1.15	12,164,803	305 429
1918	28.4	15,238,139	.89	13,561,855	537,975
Average for 23 years	26.4	11,947,760	.50	5,603,393	451,000

RYE—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	14	574,000	$ .38	$ 218,120	41,000
1885	15	1,710,000	.42	718,200	114,000
1890	16	1,608,960	.51	820,570	100,560

RYE—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	15	1,891,716	$ .25	$ 486,680	121,670
1897	15	3,490,344	.34	1,186,710	226,198
1898	16	3,370,550	.38	1,280,800	210,309
1899	16.3	2,061,160	.40	824,460	126,236
1900	15.6	1,621,130	.43	697,300	103,680
1901	15.8	859,630	.48	859,630	54,390
1902	17	882,830	.40	353,132	55,150
1903	15.6	1,923,060	.44	846,146	123,273
1904	15	1,517,090	.54	819,228	99,500
1905	18	1,283,500	.52	667,420	71,305
1906	17.5	1,093,160	.48	520,719	62,530
1907	17	900,060	.61	549,036	52,975
1908	17.1	869,072	.63	547,515	50,893
1909	13.4	556,846	.60	334,107	41,606
1910	13.8	407,058	.61	248,305	29,502
1911	16.8	486,130	.79	384,043	28,710
1912	20.7	888,530	.61	542,003	42,970
1913	18.3	1,274,500	.59	751,955	69,830
1914	19	1,369,260	.77	1,054,320	73.150
1915	18.6	1,301,140	.77	1,001,877	69,970
1916	12.5	461,210	1.15	530,392	36,886
1917	14.6	706,594	1.58	1,116,418	48,404
1918	12.4	860,393	1.48	1,273,382	69,395
Average for 23 years	16.2	1,307,607	.65	733,720	81,241

FLAX—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	10	1,034,200	$ 1.00	$ 1,034,200	103,420
1885			.94	2,563,293	
1890	10.5	2,929,081	1.10	3,276,989	283,722

FLAX—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	9.5	1,946,720	$ .95	$ 1,135,000	199,128
1897	10	2,498,600	.87	2,173,782	249,882
1898	10.5	2,376,600	.80	1,901,280	225,014
1899	11.2	1,597,790	1.04	1,661,898	142,175
1900	11.7	1,222,980	1.50	1,834,470	108,850
1901	18.8	916,890	1.29	916,890	104,140
1902	8	755,350	1.00	725,350	94,767
1903	8.7	355,160	.78	277,024	40,823
1904	11	591,140	1.15	679,811	51,370
1905	9.8	173,770	.90	156,393	17,732
1906	10.7	205,280	.97	200,091	19,160
1907	10.8	461,960	.98	408,640	42,790
1908	11.3	461,580	1.01	466,175	40,833
1909	10	173,650	1.29	223,647	17.365
1910	8.6	170,387	2.28	388,482	19,821
1911	8.5	173,710	2.00	347,420	20,205
1912	11.3	423,060	1.31	554,208	37,305
1913	10	223,490	1.36	303,946	22,255
1914	11	152,280	1.21	184,258	14,440
1915	9.5	127,701	1.57	200,491	13,455
1916	8.5	65,196	2.06	134,304	7,658
1917	9.9	82,734	2.87	237,446	8,384
1918	8.2	123,077	3.26	401,232	14,973
Average for 23 years	10.3	664,309	1.49	674,445	65,762

POTATOES—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1880	95	10,165,000	$ .35	$ 3,557,750	107,000
1885	82	12,874,000	.40	5,149,600	157,000
1890	49	8,332,352	.81	6,749,205	170,048

POTATOES—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel Dec. 1st	Total value	Acreage
1896	87	14,814,795	$ .21	$ 2,962,950	170,285
1897	60	10,051,910	.45	4,523,360	163,248
1898	76	12,538,410	.31	3,826,900	164,456
1899	98	15,252,934	.24	3,660,714	154,243
1900	78	10,850,900	.40	4,340,360	149,680
1901	37.4	5,098,460	.90	4,588,610	136,300
1902	91	12,051,670	.34	4,095,650	138,484
1903	53.8	6,082,694	.75	4,562,020	113,433
1904	125	14,255,680	.28	3,991,590	113,250
1905	84	9,352,190	.50	4,676,045	111,335
1906	101	11,697,500	.48	5,614,800	115,310
1907	84	9,847,430	.62	6,105,406	117,350
1908	89.9	10,658,290	.59	6,288,391	118,517
1909	90	12,427,595	.53	6,586,625	138,139
1910	75.3	9,986,881	.58	5,792,391	132,640
1911	71	9,386,390	.71	8,353,887	132.865
1912	104	12,904,500	.44	5,677,980	124,030
1913	47.3	5,532,170	.85	4,702,344	117,000
1914	87	9,540,200	.58	5,533,316	110,205
1915	93	8,002,200	.53	4,241,166	85.140
1916	46.6	4,132,494	1.75	7,231,864	88,691
1917	85.4	8,561,511	1.32	11,301,194	100,246
1918	73.3	7,082,480	1.32	9,248,874	96,656
Average for 23 years	79.9	10,004,752	.64	5,561,149	125,718

HAY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year.	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
*1880 ----	------	----------	------	----------	----------	------	------	----------	----------
*1885 ----	------	----------	------	----------	----------	------	------	----------	----------
1890 ----	1.5	4,991,335	------	----------	----------	$ 6.84	------	$34,140,731	3,327,577

*No authentic data obtainable.

HAY—1896-1918.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year.	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
1896 -----	1.5	3,376,440	1.5	2,325,000	5,701,440	$ 4.50	$ 3.30	$22,782,000	3,800,960
1897 -----	1.6	3,362,287	1.3	1,939,117	5,301,404	4.50	3.70	22,304,000	3,315,972
1898 -----	1.7	3,852,561	1.2	1,645,419	5,497,980	4.30	3.50	22,281,000	4,104,967
1899 -----	1.5	4,852,941	1.2	1,458,195	6,311,136	5.75	4.90	29,350,000	3,742,655
1900 -----	1.4	3,609,010	1	1,530,050	5,139,060	6.50	5.00	31,120,000	4,078,960
1901 -----	1.4	3,711,680	1.2	1,268,700	4,980,380	8.25	6.30	38,712,000	3,608,450
1902 -----	1.8	4,439,040	1.3	1,202,860	5,641,900	6.80	5.50	36,787,322	3,391,408
1903 -----	1.9	5,216,404	1.3	1,191,345	6,407,749	5.75	4.95	35,891,480	3,651,894
1904 -----	1.5	4,499,090	1.2	1,091,590	5,590,680	5.62	4.50	30,197,040	3,707,298
1905 -----	1.8	6,477,300	1.2	1,313,310	7,790,610	5.50	4.50	41,535,045	4,692,925
1906 -----	1.3	4,892,950	1.2	1,110,690	6,003,640	7.50	5.50	42,805,920	4,418,600
1907 -----	1.5	5,117,878	1.3	1,172,590	6,290,468	8.50	6.75	51,316,945	4,268,730
1908 -----	1.8	5,838,640	1.6	1,445,989	7,284,629	6.16	5.09	43,326,060	4,146,870
1909 -----	1.7	5,828,580	1.4	1,219,630	7,048,210	7.42	5.90	50,443,781	4,299,740
1910 -----	1.1	3,876,844	1.1	807,280	4,684,124	10.15	8.00	45,808,207	4,367,725
1911 -----	0.8	3,246,200	0.9	683,385	3,929,585	13.44	10.28	50,653,116	4,214,540
1912 -----	1.6	4,287,600	1.4	1,085,440	5,373,040	9.89	7.43	50,469,183	3,682,359
1913 -----	1.5	4,010,300	1.3	910,205	4,920,505	9.93	8.80	47,832,083	3,359,365
1914 -----	1.4	4,234,370	1.3	860,280	5,094,650	10.78	8.28	52,769,626	3,607,320
1915 -----	1.8	5,955,080	1.3	841,463	6,796,543	8.94	7.41	59,473,633	3,870,542
1916 -----	1.4	4,324,165	1.2	645,709	4,969,874	9.00	7.89	44,612,129	3,702,855
1917 -----	1.1	3,209,412	1.1	598,177	3,807,589	18.82	14.79	69,248,170	3,286,061
1918 -----	1.1	3,010,684	1.1	511,711	3,522,395	19.57	16.00	67,106,462	3,182,728
Average 23 years	1.5	4,401,281	1.2	1,167,745	5,569,021	8.59	6.88	32,883,704	3,847,958

CORN.

TABLE 1.—Corn: Area and production in undermentioned countries, 1916-1918.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
NORTH AMERICA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
United States	105,296,000	116,730,000	107,494,000	2,566,927,000	3,065,233,000	2,582,814,000
Canada:						
British Columbia			(1)			11,000
Ontario	160,000	160,000	195,000	5,960,000	5,960,000	5,664,000
Quebec	13,000	74,000	55,000	322,000	1,803,000	1,272,000
Total	173,000	234,000	250,000	6,282,000	7,763,000	6,947,000
Mexico				[2] 110,065,000		
Total				2,683,274,000		
SOUTH AMERICA						
Argentina	9,928,000	8,969,000	8,715,000	161,133,000	58,839,000	170,660,000
Chile	66,000			1,570,000	1,331,000	
Uruguay	697,000			4,604,000		
Total	10,691,000			167,307,000		
EUROPE						
Austria-Hungary:						
Austria[3]	[4] 362,000			[4] 8,050,000		
Hungary proper	[4] 6,194,000			[4] 180,550,000		
Croatia-Slavonia				[4] 25,000,000		
Bosnia-Herzegovina				[4] 7,000,000		
Total Austria-Hungary				220,600,000		
Bulgaria	[5] 1,571,000			[4] 35,000,000		
France	812,000	738,000	841,000	[4] 17,104,000	16,215,000	
Italy	3,918,000	3,572,000	3,459,000	81,547,000	75,452,000	
Portugal				[4] 9,275,000		
Roumania	5,056,000	1,077,000		[4] 86,412,000		
Russia:						
Russia proper	2,865,000			62,207,000		
Northern Caucasia	[4] 917,000			[4] 18,520,000		
Total Russia	3,782,000			80,727,000		
Serbia				[4] 12,000,000		
Spain	1,154,000	1,175,000	1,169,000	28,642,000	29,369,000	24,141,000
Switzerland	4,000	5,000	7,000	150,000	252,000	358,000
Total				541,457,000		
ASIA						
British India	6,679,000	6,241,000		100,080,000	93,760,000	
Japan	144,000	142,000	144,000	4,102,000	3,705,000	
Philippine Islands	1,069,000	1,058,000		14,083,000	13,441,000	
Total	7,892,000	7,441,000		118,265,000	110,906,000	
AFRICA						
Algeria		20,000			302,000	
Egypt	1,850,000	1,685,000		68,362,000	63,757,000	
Union of South Africa	2,740,000	3,150,000	3,300,000	26,304,000	36,516,000	29,708,000
Total	4,590,000	4,855,000		94,666,000	100,575,000	

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[1] Less than 500.

[2] Figures for 1906.

[3] Galicia and Bukowina not included.

[4] Figures for 1915.

[5] Figures for 1914.

CORN—Continued.

TABLE 1.—Corn: Area and production in undermentioned countries, 1916-1918. —Continued.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
AUSTRALASIA						
Australia:	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Queensland	146,000	181,000		2,003,000	3,019,000	
New South Wales	154,000	155,000		3,773,000	4,333,000	
Victoria	22,000	23,000		1,000,000	1,172,000	
Western Australia	(1)	(1)		(1)	1,000	
South Australia	1,000	(1)		16,000	1,000	
Total Australia	324,000	360,000		6,794,000	8,527,000	
New Zealand	8,000	6,000	8,000	340,000	274,000	425,000
Total Australasia	332,000	366,000		7,134,000	8,801,000	
Grand total				3,642,103,000		

[1] Less than 500.

TABLE 2.—Corn: Total production of countries named in Table 1, 1895-1916.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels.		Bushels.		Bushels.		Bushels.
1895	2,834,750,000	1901	2,366,883,000	1907	3,420,321,000	1913	3,587,429,000
1896	2,964,435,000	1902	3,187,311,000	1908	3,606,931,000	1914	3,777,913,000
1897	2,587,206,000	1903	3,066,506,000	1909	3,563,226,000	1915	4,201,589,000
1898	2,682,619,000	1904	3,109,252,000	1910	4,031,630,000	1916	3,642,103,000
1899	2,724,100,000	1905	3,461,181,000	1911	3,481,007,000		
1900	2,792,561,000	1906	3,963,645,000	1912	4,371,888,000		

TABLE 3.—Corn: Acreage, production, and total farm value, by States, 1917 and 1918.

State.	Thousands of Acres.		Production. (thousands of bushels)		Total value, basis December 1 price. (thousands of dollars)	
	1918	1917	1918	1917	1918	1917
Maine	27	19	1,215	703	2,029	1,603
New Hampshire	28	24	1,260	960	1,890	2,083
Vermont	45	39	1,710	1,755	2,907	3,738
Massachusetts	40	32	2,080	1,440	3,536	3,096
Rhode Island	13	13	572	546	1,030	1,289
Connecticut	56	48	2,800	2,400	4,788	5,160
New York	820	820	29,520	25,420	51,660	50,332
New Jersey	279	297	11,439	12,474	17,158	21,206
Pennsylvania	1,560	1,575	62,400	61,425	96,720	93,980
Delaware	235	230	7,285	7,820	9,908	10,948
Maryland	686	700	24,010	27,300	32,414	38,220
Virginia	2,000	2,100	56,000	56,700	89,600	86,751
West Virginia	800	800	24,800	24,000	44,640	40,800
North Carolina	3,065	2,920	64,365	58,400	113,926	99,280
South Carolina	2,250	2,150	38,250	40,850	74,588	78,432

CORN—Continued.

TABLE 3.—Corn: Acreage, production, and total farm value, by States, 1917 and 1918—Continued.

State.	Thousands of Acres.		Production. (thousands of bushels)		Total value, basis December 1 price. (thousands of dollars)	
	1918	1917	1918	1917	1918	1917
Georgia	4,590	4,500	68,850	72,000	113,602	115,200
Florida	880	800	14,080	12,000	19,430	16,800
Ohio	3,700	3,950	133,200	150,100	173,160	204,136
Indiana	5,138	5,466	169,554	196,776	201,769	245,970
Illinois	9,900	11,000	351,450	418,000	421,740	459,800
Michigan	1,610	1,750	48,300	37,625	62,790	68,478
Wisconsin	1,717	1,918	69,538	42,196	90,399	68,779
Minnesota	2,750	3,060	110,000	91,800	122,100	100,980
Iowa	10,434	11,100	375,624	410,700	458,261	443,556
Missouri	6,693	6,900	133,860	241,500	191,420	275,310
North Dakota	484	590	9,196	5,310	11,955	8,018
South Dakota	3,182	3,350	108,188	93,800	119,007	112,560
Nebraska	6,954	9,240	123,086	249,480	157,550	299,376
Kansas	6,130	9,156	43,523	119,028	64,849	148,785
Kentucky	3,600	3,650	93,600	114,975	136,656	139,120
Tennessee	3,500	3,600	84,000	104,400	121,800	125,280
Alabama	4,636	4,825	67,686	77,200	100,175	96,500
Mississippi	3,900	3,786	66,300	77,613	100,113	107,106
Louisiana	1,850	1,800	29,600	32,400	47,656	47,304
Texas	6,900	6,900	69,000	75,900	121,440	126,753
Oklahoma	3,250	3,900	24,375	33,150	39,975	48,730
Arkansas	2,700	2,674	35,100	64,176	63,180	89,846
Montana	100	81	2,100	1,012	2,835	1,771
Wyoming	40	35	1,000	700	1,400	1,225
Colorado	527	532	11,067	10,640	14,940	13,300
New Mexico	170	170	4,250	3,400	7,650	6,392
Arizona	34	32	952	864	1,999	1,642
Utah	24	20	672	500	1,216	850
Nevada	2	2	64	60	134	90
Idaho	23	18	920	558	1,684	865
Washington	43	41	1,634	1,517	2,778	2,458
Oregon	44	42	1,364	1,260	2,114	1,890
California	85	75	2,975	2,400	5,742	4,440
United States	107,494	116,730	2,582,814	3,065,233	3,528,313	3,920,228

WHEAT.

TABLE 4.—Wheat: Area and production of undermentioned countries, 1916-1918.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
NORTH AMERICA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
United States	52,316,000	45,089,000	59,110,000	636,318,000	636,655,000	917,100,000
Canada:						
New Brunswick	14,000	16,000	49,000	242,000	192,000	----------
Ontario	865,000	770,000	714,000	17,931,000	16,318,000	----------
Manitoba	2,726,000	2,449,000	2,984,000	29,667,000	41,040,000	----------
Saskatchewan	9,032,000	8,273,000	9,249,000	147,559,000	117,921,000	----------
Alberta	2,605,000	2,897,000	3,892,000	65,088,000	52,992,000	----------
Other	128,000	351,000	465,000	2,294,000	5,280,000	----------
Total Canada	15,370,000	14,756,000	17,353,000	262,781,000	233,743,000	189,301,000
Mexico	(1)	(1)	----------	[2] 11,468,000	----------	----------
Total	----------	----------	----------	910,567,000	----------	----------
SOUTH AMERICA						
Argentina	16,420,000	16,089,000	17,875,000	172,620,000	70,224,000	219,431,000
Chile	1,143,000	----------	----------	20,184,000	24,067,000	28,292,000
Uruguay	950,000	780,000	1,014,000	9,867,000	5,390,000	12,860,000
Total	18,513,000	----------	----------	202,671,000	99,681,000	----------
EUROPE						
Austria-Hungary:						
Austria[3]	[4] 1,588,000	----------	----------	[4] 28,286,000	----------	----------
Hungary proper	[4] 8,288,000	----------	----------	[4] 152,934,000	----------	----------
Croatia-Slavonia	[5] 741,000	----------	----------	[4] 15,000,000	----------	----------
Bosnia-Herzegovina	[6] 320,000	----------	----------	[4] 3,000,000	----------	----------
Total Austria-Hungary	10,937,000	----------	----------	[4] 199,220,000	----------	----------
Belgium	[5] 400,000	----------	----------	[4] 8,000,000	----------	----------
Bulgaria	[5] 2,638,000	----------	----------	38,241,000	----------	----------
Denmark	152,000	131,000	141,000	6,044,000	4,296,000	6,320,000
Finland	[7] 8,000	----------	----------	[5] 196,000	----------	----------
France[8]	12,429,000	10,439,000	11,927,000	204,908,000	144,149,000	----------
Germany	[4] 4,950,000	----------	----------	[4] 141,676,000	----------	----------
Greece	(1)	----------	----------	[4] 6,000,000	----------	----------
Italy	11,679,000	10,556,000	10,798,000	176,530,000	139,999,000	176,368,000
Luxemburg	27,000	22,000	24,000	433,000	388,000	512.000
Netherlands	136,000	122,000	143,000	4,035,000	3,452,000	4,823,000
Norway	14,000	20,000	20,000	317,000	432,000	----------
Portugal	(1)	685,000	----------	6,640,000	5,560,000	----------
Roumania	4,844,000	----------	----------	78,520,000	----------	----------
Russia:						
Russia proper	42,030,000	----------	----------	440,082,000	----------	----------
Poland	[3] 1,312,000	----------	----------	[6] 24,011,000	----------	----------
Northern Caucasia	[4]10,021,000	----------	----------	[4] 127,631,000	----------	----------
Total Russia, European	53,363,000	----------	----------	591,724,000	----------	----------
Serbia	[6] 573,000	----------	----------	[4] 10,000,000	----------	135,709,000
Spain	10,148,000	10,340,000	10,228,000	152,329,000	142,674,000	135,709.000
Sweden	307,000	329,000	377,000	8,979,000	6,864,000	6,616,000
Switzerland	124,000	139,000	203,000	4,053,000	4,556,000	7,095,000
Turkey, European	[9]19,460,000	----------	----------	----------	----------	----------

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[1] No official estimates.
[2] Figures for 1907.
[3] Galicia and Bukowina not included.
[4] Figures for 1915.
[5] Figures for 1914.
[6] Figures for 1913.
[7] Figures for 1910.
[8] Excludes territory occupied by the enemy.
[9] Figures for 1911.

WHEAT—Continued.

TABLE 4.—Wheat: Area and production of undermentioned countries, 1916-1918—Continued.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
United Kingdom:	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
England	1,862,000	1,855,000	--------	54,941,000	57,397,000	--------
Wales	50,000	64,000	--------	1,466,000	1,726,000	--------
Scotland	63,000	61,000	--------	2,336,000	2,510,000	--------
Ireland	76,000	124,000	--------	2,916,000	4,717,000	--------
Total United Kingdom	2,051,000	2,104,000	--------	61,659,000	66,350,000	93,099,000
Total	--------	--------	--------	1,699,504,000	--------	--------
ASIA						
British India[1]	30,320,000	32,940,000	35,497,000	323,008,000	379,232,000	379,829,000
Cyprus	(2)	(2)	--------	[3] 1,924,000	--------	--------
Japanese Empire:						
Japan	1,304,000	1,393,000	1,486,000	30,137,000	34,739,000	31,127,000
Formosa	14,000	--------	--------	138,000	--------	--------
Korea	[3] 499,000	--------	--------	[3] 6,146,000	--------	--------
Persia	(2)	--------	--------	[3] 16,000,000	--------	--------
Russia:						
Central Asia (4 governments of)	[3] 5,421,000	--------	--------	[3] 44,132,000	--------	--------
Siberia (4 governments of)	[3] 7,727,000	--------	--------	[3] 50,308,000	--------	--------
Transcaucasia (1 government)	[3] 10,000	--------	--------	[3] 126,000	--------	--------
Total	13,158,000	--------	--------	[3] 94,566,000	--------	--------
Turkey (Asiatic)	--------	--------	--------	[4] 145,519,000	--------	--------
Total	--------	--------	--------	617,438,000	--------	--------
AFRICA						
Algeria	3,272,000	3,222,000	3,186,000	29,151,000	23,151,000	49,199,000
Egypt	1,447,000	1,116,000	1,286,000	36,543,000	29,834,000	32,555,000
Tunis	1,482,000	1,310,000	1,413,000	7,165,000	6,963,000	8,451,000
Union of South Africa	785,000	755,000	925,000	6,477,000	4,790,000	8,833,000
Total	6,986,000	--------	--------	79,336,000	--------	--------
AUSTRALASIA						
Australia:						
Queensland	94,000	228,000	--------	427,000	2,463,000	--------
New South Wales	4,189,000	3,806,000	--------	68,869,000	36,585,000	--------
Victoria	3,680,000	3,126,000	--------	60,366,000	51,162,000	--------
South Australia	2,739,000	2,778,000	--------	35,210,000	45,745,000	--------
Western Australia	1,734,000	1,567,000	--------	18,811,000	16,103,000	--------
Tasmania	49,000	28,000	--------	1,025,000	348,000	--------
Other	--------	1,000	--------	--------	14,000	--------
Total Australia	12,485,000	11,533,000	9,880,000	184,709,000	152,420,000	114,866,000
New Zealand	329,000	219,000	294,000	7,108,000	5,083,000	6,761,000
Total Australasia	12,814,000	11,752,000	--------	191,817,000	157,503,000	121,627,000
Grand total	--------	--------	--------	3,701,333,000	--------	--------

[1] Includes Native States. [2] No official estimates. [3] Figures for 1915. [4] Figures for 1911.

WHEAT—Continued.

TABLE 5.—Wheat: Total production of countries named in Table 4, 1891-1916.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels.		Bushels.		Bushels.		Bushels.
1891	2,432,322,000	1898	2,948,305,000	1905	3,327,084,000	1912	3,791,951,000
1892	2,481,805.000	1899	2,783,885,000	1906	3,434,354,000	1913	4,127,437,000
1893	2,559,174,000	1900	2,610,751,000	1907	3,133,965,000	1914	3,585,916,000
1894	2,660,557,000	1901	2,955,975,000	1908	3,182,105,000	1915	4,127,685,000
1895	2,593,312,000	1902	3,090,116,000	1909	3,581,519,000	1916	3,701,333,000
1896	2,506,320,000	1903	3,189,813,000	1910	3,575,055,000		
1897	2,236,268,000	1904	3,163,542,000	1911	3,551,795,000		

TABLE 6.—Wheat: Acreage, production, and total farm value, by States, 1917 and 1918.

State.	Thousands of Acres.		Production. (thousands of bushels)		Total value, basis December 1 price. (thousands of dollars)	
	1918	1917	1918	1917	1918	1917
Maine	23	11	506	154	1,199	362
Vermont	18	6	396	120	915	283
New York	430	420	7,840	8,820	16,856	18,522
New Jersey	100	89	1,700	1,691	3,655	3,602
Pennsylvania	1,454	1,399	24,718	24,482	52,897	50,188
Delaware	133	131	1,729	2,162	3,838	4,497
Maryland	732	675	11,346	11,475	24,848	23,753
Virginia	1,300	1,200	15,600	15,600	34,164	33,696
West Virginia	348	315	4,942	4,410	10,922	9,570
North Carolina	1,015	860	7,105	8,600	16,342	20,124
South Carolina	205	165	2,255	1,732	5,863	5,023
Georgia	356	244	3,631	2,074	9,658	6,015
Ohio	2,290	1,870	43,547	41,140	92,320	83,926
Indiana	2,353	1,807	49,427	33,432	102,808	67,867
Illinois	2,774	1,650	60,991	30,850	126,861	62,008
Michigan	754	857	10,716	15,422	22,397	31,460
Wisconsin	406	239	9,837	5,327	20,166	10,761
Minnesota	3,799	2,947	79,710	51,611	162,608	104,254
Iowa	1,050	420	19,650	8,350	39,300	16,616
Missouri	3,092	1,896	53,154	28,971	108,966	56,493
North Dakota	7,770	7,000	101,010	56,000	205,050	112,000
South Dakota	3,765	3,200	71,305	44,800	141,896	87,808
Nebraska	3,828	997	43,141	13,764	84,988	26,840
Kansas	7,248	3,737	102,008	45,443	202,996	89.977
Kentucky	933	750	12,129	9,000	25,956	19,080
Tennessee	750	500	7,500	4,600	16,050	10,212
Alabama	140	93	1,330	930	3,258	2,511
Mississippi	30	14	495	210	1,238	630
Texas	892	1,350	8,920	16,200	19,178	34,020
Oklahoma	2,611	3,100	32,899	35,650	66,127	69,161
Arkansas	254	195	3,048	3,120	6,309	6,271
Montana	2,062	1,727	25,434	17,963	49,342	34,489
Wyoming	260	203	6,600	4,306	12,474	8,612
Colorado	742	600	13,335	13,536	26,003	26,124
New Mexico	213	203	3,334	2,582	7,001	5,551
Arizona	38	33	988	825	2,371	1,732
Utah	320	296	6,464	5,640	12,152	10,039
Nevada	42	41	1,070	1,140	2,205	2,052
Idaho	845	756	18,043	15,332	34,643	27.904
Washington	2,191	1,855	26,429	29,218	51,801	56,391
Oregon	1,038	863	15,228	12,548	30,608	22,838
California	506	375	7,590	7,425	16,394	14,850
United States	59,110	45,089	917,100	636,655	1,874,623	1,278,112

OATS.

TABLE 7.—Oats: Area and production in undermentioned countries, 1916-1918.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
NORTH AMERICA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
United States	41,527,000	43,553,000	44,400,000	1,251,837,000	1,592,740,000	1,538,359,000
Canada:						
New Brunswick	198,000	190,000	224,000	6,039,000	4,275,000	
Quebec	1,073,000	1,493,000	1,933,000	24,411,000	32,466,000	
Ontario	1,991,000	2,687,000	2,924,000	50,771,000	98,075,000	
Manitoba	1,444,000	1,500,000	1,715,000	48,439,000	45,375,000	
Saskatchewan	3,792,000	4,522,000	4,988,000	163,278,000	123,214,000	
Alberta	2,124,000	2,538,000	2,652,000	102,199,000	86,289,000	
Other	374,000	383,000	354,000	15,074,000	13,316,000	
Total Canada	10,996,000	13,313,000	14,790,000	410,211,000	403,010,000	380,274,000
Mexico	(1)			[2] 15,000		
Total				1,662,063,000		
SOUTH AMERICA						
Argentina	2,565,000	2,525,000	3,200,000	75,280,000	31,781,000	75,783,000
Chile	161,000			6,350,000		
Uruguay	105,000	142,000	156,000	2,283,000	1,926,000	
Total	2,831,000			83,913,000		
EUROPE						
Austria-Hungary:						
Austria[3]	[4] 2,663,000			[4] 57,625,000		
Hungary proper	[4] 2,664,000			[4] 80,925,000		
Croatia-Slavonia	[5] 256,000			[4] 5,000,000		
Bosnia-Herzegovina	[5] 299,000			[4] 4,000,000		
Total Austria-Hungary	5,882,000			[4] 147,550,000		
Belgium	[6] 686,000			(1)		
Bulgaria	[6] 379,000			7,372,000		
Denmark	1,042,000	981,000	981,000	51,656,000	37,653,000	
Finland	[7] 987,000			[6] 19,572,000		
France[8]	7,777,000	7,706,000	7,227,000	277,179,000	237,426,000	
Germany	[4] 11,404,000			[4] 412,400,000		
Italy	1,103,000	1,107,000	1,211,000	26,076,000	33,889,000	41,336,000
Luxemburg	69,000	56,000	48,000	2,720,000	2,015,000	1,459,000
Netherlands	343,000	371,000	356,000	22,240,000	18,594,000	17,182,000
Norway	307,000	356,000	343,000	13,502,000	14,591,000	
Roumania	1,068,000			28,935,000		
Russia:						
Russia proper[8]	34,706,000			843,249,000		
Poland	[5] 2,981,000			[5] 84,412,000		
Northern Caucasia	[4] 985,000			[4] 25,267,000		
Total	38,672,000			952,928,000		
Serbia	[5] 272,000			[4] 4,000,000		
Spain	1,398,000	1,425,000	1,507,000	32,163,000	33,048,000	30,474,000
Sweden	1,954,000	1,929,000	1,785,000	93,089,000	70,754,000	64,684,000
United Kingdom						
England	1,862,000	2,013,000		77,676,000	80,981,000	
Wales	222,000	246,000		8,237,000	8,678,000	
Scotland	991,000	1,041,000		37,362,000	44,949,000	
Ireland	1,072,000	1,464,000		52,774,000	80,119,000	
Total United Kingdom	4,147,000	4,764,000		176,049,000	214,727,000	309,564,000
Total	77,449,000			2,267,431,000		

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[1] No official statistics.
[2] Data for 1907.
[3] Galicia and Bukowina not included.
[4] Data for 1915.
[5] Data for 1913.
[6] Data for 1914.
[7] Data for 1910.
[8] Excludes territory occupied by the enemy.

OATS—Continued.

TABLE 7.—Oats: Area and production in undermentioned countries, 1916-1918 —Continued.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
ASIA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Cyprus	(1)	-----	-----	[2] 405,000	-----	-----
Russia:						
Central Asia (4 governments of)	[2] 986,000	-----	-----	[2] 16,422,000	-----	-----
Siberia (4 governments of)	[2] 5,161,000	-----	-----	[2] 68,381,000	-----	-----
Transcaucasia (1 government of)	[2] 2,000	-----	-----	[2] 36,000	-----	-----
Total	6,149,000	-----	-----	84,839,000	-----	-----
Total	-----	-----	-----	85,244,000	-----	-----
AFRICA						
Algeria	536,000	682,000	588,000	13,140,000	16,125,000	26,564,000
Tunis	164,000	124,000	148,000	2,067,000	3,996,000	3,858,000
Union of South Africa	(1)	250,000	257,000	-----	6,928,000	-----
Total Australia[4]	700,000	-----	-----	15,207,000	-----	-----
AUSTRALASIA						
Australia:						
Queensland	(3)	7,000	-----	2,000	109,000	-----
New South Wales	58,000	67,000	-----	1,344,000	1,083,000	-----
Victoria	354,000	442,000	-----	9,329,000	8,289,000	-----
South Australia	127,000	152,000	-----	2,134,000	1,840,000	-----
Western Australia	104,000	122,000	-----	1,538,000	1,689,000	-----
Tasmania	78,000	55,000	-----	2,189,000	1,006,000	-----
Total Australia[4]	722,000	844,000	-----	16,539,000	14,018,000	9,850,000
New Zealand	213,000	177,000	-----	7,653,000	5,371,000	4,943,000
Total Australasia	935,000	1,021,000	-----	24,192,000	19,389,000	-----
Grand total	-----	-----	-----	4,138,050,000	-----	-----

[1] No official statistics. [2] Data for 1915. [3] Less than 500 acres. [4] Including "Territories."

TABLE 8.—Oats: Total production in countries named in Table 7, 1895-1916.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels.		Bushels.		Bushels.		Bushels.
1895	3,008,154,000	1901	2,862,615,000	1907	3,603,896,000	1913	4,697,437,000
1896	2,847,115,000	1902	3,626,303,000	1908	3,591,012,000	1914	4,034,857,000
1897	2,633,971,000	1903	3,378,034,000	1909	4,312,882.000	1915	4,362,713,000
1898	2,903,974.000	1904	3,611,302,000	1910	4,182,410,000	1916	4,138,050,000
1899	3,256,256,000	1905	3,510,167,000	1911	3,808,561,000		
1900	3,166,002,000	1906	3,544,961,000	1912	4,617,394,000		

OATS—Continued.

TABLE 9.—Oats: Acreage, production, and total farm value, by States. 1917 and 1918.

State.	Thousands of Acres.		Production. (thousands of bushels)		Total value, basis December 1 price. (thousands of dollars)	
	1918	1917	1918	1917	1918	1917
Maine	169	120	6,760	3,480	6,084	2,958
New Hampshire	24	17	912	646	793	543
Vermont	103	82	4,223	2,952	3,801	2.509
Massachusetts	12	7	480	259	437	210
Rhode Island	2	2	84	62	76	46
Connecticut	24	18	912	594	821	469
New York	1,260	1,200	51,660	42,000	43,394	31,500
New Jersey	85	75	3,400	2,550	2,686	1,785
Pennsylvania	1,210	1,150	47,190	40,250	37,752	29,382
Delaware	5	4	175	128	152	100
Maryland	60	47	1,980	1,457	1,703	1,093
Virginia	225	225	5,175	5,512	5,175	4,630
West Virginia	160	125	4,320	3,375	3,931	2,666
North Carolina	325	275	6,500	4,400	7,020	4,092
South Carolina	500	400	11,000	6,000	12,980	6,000
Georgia	600	550	12,000	8,800	14,280	10,296
Florida	60	55	1,080	770	1,242	755
Ohio	1,800	1,775	79,200	78,100	55,440	49,984
Indiana	2,025	2,022	85,050	84,924	56,984	53.502
Illinois	4,508	4,600	198,352	239,200	132,896	155,480
Michigan	1,658	1,550	66,320	55,800	45,761	35,712
Wisconsin	2,364	2,250	110,162	99,000	73,809	65,340
Minnesota	3,282	3,250	134,562	120,250	84,774	75,758
Iowa	5,466	5,412	229,572	254,364	146,926	160,249
Missouri	1,524	1,480	44,196	59,200	30,937	36,112
North Dakota	2,575	2,575	60,512	38,625	36,912	23,948
South Dakota	2,160	2,138	84,240	72,692	49,702	44,342
Nebraska	2,531	3,038	56,188	115,444	36,522	70,421
Kansas	2,329	2,284	51,238	70,804	37,404	45,315
Kentucky	400	310	9,600	8,060	8,640	6,126
Tennessee	325	290	8,125	7,250	7,556	6.018
Alabama	428	420	8,132	7,560	8,701	7.711
Mississippi	280	300	5,600	5,700	5,992	5.358
Louisiana	80	84	2,000	1,873	1,980	1,761
Texas	1,510	1,425	22,197	37,050	20,421	30,381
Oklahoma	1,380	1,150	33,120	26,450	27,821	19,838
Arkansas	442	340	11,271	9,520	9,918	7,140
Montana	680	680	20,400	13,600	16,320	11,016
Wyoming	285	263	11,685	9,468	9,348	7,574
Colorado	293	293	9,669	11,134	7,735	8,462
New Mexico	45	45	1,260	1,350	1,121	1,134
Arizona	11	10	440	400	528	384
Utah	98	100	4,410	4,400	4,278	3,740
Nevada	14	14	532	560	628	538
Idaho	237	250	9,480	9,500	8,911	7,315
Washington	310	292	8,370	11,242	8,203	9,106
Oregon	361	365	9,025	9,125	8,664	6,844
California	175	196	5,600	6,860	5,264	5,831
United States	44,400	43,553	1,538,359	1,592,740	1,092,423	1,061,474

BARLEY.

TABLE 10.—Barley: Area and production in undermentioned countries, 1916-1918.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
NORTH AMERICA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
United States	7,757,000	8,933,000	9,679,000	182,309,000	211,759,000	256,375,000
Canada:						
New Brunswick	2,000	2,000	7,000	45,000	40,000	-----
Quebec	73,000	166,000	189,000	1,456,000	3,064,000	-----
Ontario	326,000	361,000	660,000	7,498,000	11,191,000	-----
Manitoba	688,000	708,000	1,103,000	13,729,000	15,930,000	-----
Saskatchewan	367,000	670,000	699,000	9,916,000	14,068,000	-----
Alberta	337,000	472,000	470,000	9,774,000	10,386,000	-----
Other	10,000	13,000	25,000	352,000	379,000	-----
Total Canada	1,803,000	2,392,000	3,154,000	42,770,000	55,058,000	77,290,000
Mexico	(1)	-----	-----	[2] 10,840,000	-----	-----
Total	-----	-----	-----	235,919,000	-----	-----
SOUTH AMERICA						
Argentina	431,000	388,000	-----	5,430,000	2,165,000	-----
Chile	121,000	(1)	-----	4,358,000	-----	-----
Uruguay	10,000	13,000	-----	115,000	110,000	-----
Total	562,000	-----	-----	9,903,000	-----	-----
EUROPE						
Austria-Hungary:						
Austria[3]	[4] 1,578,000	-----	-----	[4] 29,733,000	-----	-----
Hungary proper	[4] 2,830,000	-----	-----	[4] 56,186,000	-----	-----
Croatia-Slavonia	[5] 158,000	-----	-----	[4] 1,938,000	-----	-----
Bosnia-Herzegovina	[5] 263,000	-----	-----	[4] 3,000,000	-----	-----
Total Austria-Hungary	4,829,000	-----	-----	90,857,000	-----	-----
Belgium	[6] 84,000	-----	-----	[4] 4,000,000	-----	-----
Bulgaria	[6] 551,000	-----	-----	14,739,000	-----	-----
Denmark	633,000	592,000	594,000	24,477,000	17,881,000	-----
Finland	[7] 273,000	-----	-----	[6] 4,316,000	-----	-----
France[8]	1,538,000	1,789,000	1,396,000	38,268,000	39,557,000	-----
Germany	[4] 4,002,000	-----	-----	[4] 114,077,000	-----	-----
Italy	596,000	469,000	494,000	11,041,000	7,422,000	9,186,000
Luxemburg	5,000	7,000	7,000	125,000	154,000	136,000
Netherlands	60,000	52,000	58,000	2,498,000	2,573,000	2,176,000
Norway	98,000	97,000	116,000	3,415,000	3,000,000	-----
Roumania	1,454,000	-----	-----	30,038,000	-----	-----
Russia:						
Russia proper[8]	22,031,000	-----	-----	350,223,000	-----	-----
Poland	[5] 1,283,000	-----	-----	[5] 29,859,000	-----	-----
Northern Caucasia	[4] 4,400,000	-----	-----	[4] 75,328,000	-----	-----
Total Russia (European)	27,714,000	-----	-----	455,410,000	-----	-----
Serbia	[5] 149,000	-----	-----	[4] 2,250,000	-----	-----
Spain	3,886,000	4,086,000	4,209,000	86,863,000	76,747,000	90,496,000
Sweden	421,000	438,000	452,000	14,621,000	12,263,000	12,947,000
United Kingdom:						
England	1,245,000	1,365,000	-----	40,022,000	42,897,000	-----
Wales	87,000	95,000	-----	2,731,000	2,781,000	-----
Scotland	170,000	159,000	-----	5,340,000	5,816,000	-----
Ireland	150,000	177,000	-----	6,474,000	7,796,000	-----
Total United Kingdom	1,652,000	1,796,000	-----	54,567,000	59,290,000	65,029,000
Total	47,943,000	-----	-----	951,562,000	-----	-----

[1] No official statistics.
[2] Data for 1907.
[3] Galicia and Bukowina not included.
[4] Data for 1915.
[5] Data for 1913.
[6] Data for 1914.
[7] Data for 1910.
[8] Excludes territory occupied by the enemy.

BARLEY—Continued.

TABLE 10.—Barley: Area and production in undermentioned countries, 1916-1918—Continued.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
ASIA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
British India	7,924,000	7,856,000		147,653,000	155,447,000	
Cyprus	(1)			[2] 2,000,000		
Japanese Empire:						
Japan	3,075,000	2,888,000	2,721,000	89,336,000	88,896,000	76,052,000
Formosa	5,000			50,000		
Korea[4]	1,185,000			24,872,000		
Total Japanese Empire	4,265,000			114,258,000		
Russia:						
Central Asia (4 governments of)	[2] 350,000			[2] 3,278,000		
Siberia (4 governments of)	[2] 651,000			[2] 5,753,000		
Transcaucasia (1 government of)	[2] 2,000			[2] 38,000		
Total	[2] 1,003,000			[2] 9,069,000		
Total	13,192,000			272,980,000		
AFRICA						
Algeria	3,009,000	2,839,000	2,794,000	35,969,000	28,529,000	58,422.000
Egypt	439,000	445,000	336,000	13,161,000	13,598,000	9,871 000
Tunis	1,233,000	1,038,000	1,238,000	4,914,000	8,267,000	9,186,000
Union of South Africa	64,000	57,000	58,000	(1)	1,000,000	
Total	4,745,000			54,044,000	54,394,000	
AUSTRALASIA						
Australia:						
Queensland	1,000	13,000		8,000	250,000	
New South Wales	6,000	5,000		115,000	73,000	
Victoria	61,000	93,000		1,735,000	1,800,000	
South Australia	85,000	104,000		1,698,000	1,734,000	
Western Australia	10,000	11,000		131,000	134,000	
Tasmania	5,000	5,000		116,000	89,000	
Total Australia	170,000	230,000		3,802,000	4,080,000	
New Zealand	30,000	30,000	31,000	820,000	759,000	833,000
Total Australasia	200,000	260,000		4,622,000	4,839,000	
Grand total				1,529,031,000		

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[1] No ofifcial statistics.

[2] Data for 1915.

[4] Data for 1914.

TABLE 11.—Barley: Total production of countries named in Table 10, 1895-1916.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels.		Bushels.		Bushels.		Bushels.
1895	915,504,000	1901	1,072,195,000	1907	1,271,237,000	1913	1,650,265,000
1896	932,100,000	1902	1,229,132,000	1908	1,274,897,000	1914	1,463,289,000
1897	864,605,000	1903	1,235,786,000	1909	1,458,263,000	1915	1,522,732,000
1898	1,030,581,000	1904	1,175,784,000	1910	1,388,734,000	1916	1,529,031,000
1899	965,720,000	1905	1,180,053,000	1911	1,373,286,000		
1900	959,622,000	1906	1,296,579,000	1912	1,466,977,000		

BARLEY—Continued.

TABLE 11A.—Barley; Acreage,, production, and total farm value, by states, 1918

State.	Acreage.	Production.	Farm value Dec. 1.
	Acres.	Bushels.	Dollars.
Maine	12	300	447
New Hampshire	1	32	48
Vermont	16	496	759
New York	125	3,938	4,962
Pennsylvania	15	420	504
Maryland	6	186	223
Virginia	12	324	518
Ohio	100	3,150	2,930
Indiana	45	1,665	1,732
Illinois	250	9,000	8,100
Michigan	275	8,332	8,332
Wisconsin	711	25,383	23,352
Minnesota	1,400	43,400	34,720
Iowa	360	11,340	9,639
Missouri	10	250	288
North Dakota	1,734	37,281	27,215
South Dakota	1,400	41,300	32,214
Nebraska	343	5,660	4,811
Kansas	604	6,040	5,738
Kentucky	7	196	274
Tennessee	8	184	280
Texas	10	170	221
Oklahoma	8	136	169
Montana	87	1,914	1,914
Wyoming	30	1,110	1,443
Colorado	176	4,928	5,569
New Mexico	14	392	431
Arizona	30	1,020	1,326
Utah	32	1,120	1,568
Nevada	12	408	628
Idaho	175	4,900	6,370
Washington	173	2,630	3,024
Oregon	178	4,450	6,052
California	1,320	34,320	39,468
United States	9,679	256,375	235,269

RYE.

TABLE 12.—Rye: Area and production in undermentioned countries, 1916-1918.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
NORTH AMERICA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
United States	3,213,000	4,317,000	6,185,000	48,862,000	62,933,000	89,103,000
Canada:						
Quebec	8,000	22,000	29,000	118,000	376,000	545,000
Ontario	69,000	68,000	113,000	1,208,000	1,207,000	2,142,000
Manitoba	30,000	37,000	240,000	557,000	638,000	5,110,000
Saskatchewan	23,000	53,000	124,000	548,000	998,000	1,667,000

Counties	Area.			Production.		
	1916	1917	1918	1916	1917	1918
Alberta	18,000	31,000	48,000	440,000	633,000	874,000
Other	(1)	1,000	1,000	5,000	5,000	38,000
Total Canada	148,000	212,000	555,000	2,876,000	3,857,000	10,376,000
Mexico	(2)	(2)		[3] 65,000		
Total				51,803,000		
SOUTH AMERICA						
Argentina	212,000	180,000		2,008,000	858,000	
Chile	11,000			187,000		
Uruguay	(1)	(1)		1,000	1,000	
Total				2,196,000		
EUROPE						
Austria-Hungary:						
Austria[4]	[5] 3,120,000			[5] 51,211,000	(2)	
Hungary	[5] 2,625,000			[5] 45,975,000	(2)	
Croatia-Slavonia	[6] 167,000			[5] 600,000	(2)	
Bosnia-Herzegovina	[6] 65,000			[5] 2,500,000	(2)	
Total Austria-Hungary	5,977,000			100,286,000		
Belgium	[7] 645,000			[5] 18,000,000		
Bulgaria	[7] 527,000			8,490,000		
Denmark	481,000	436,000	537,000	10,801,000	8,858,000	12,716,000
Finland	[8] 592,000			[7] 11,291,000		
France[9]	2,149,000	2,002,000	1,942,000	33,351,000	27,509,000	
Germany						
Italy	290,000	279,000	272,000	5,582,000	4,460,000	4,724,000
Luxemburg	23,000	17,000	17,000	436,000	292,000	422,000
Netherlands	499,000	463,000	441,000	12,391,000	11,958,000	10,207,000
Norway	48,000	48,000	37,000	943,000	656,000	
Roumania	200,000			(2)		
Russia:						
Russia proper[9]	55,637,000			843,740,000		
Poland						
Northern Caucasia						
Total						
Serbia						
Spain	1,846,000	1,800,000	1,818,000	28,782,000	24,365,000	30,445,000
Sweden	913,000	813,000	936,000	22,929,000	15,747,000	25,648,000
Switzerland	71,000	55,000	72,000	2,000,000	1,752,000	1,850,000
United Kingdom	60,000	64,000	116,000	(2)		(2)
Total						

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[1] Less than 500 acres.

[2] No official estimates.

[3] Data for 1907.

[4] Galicia and Bukowina not included.

[5] Data for 1915.

[6] Data for 1913.

[7] Data for 1914.

[8] Census of 1910.

[9] Excludes territory occupied by the enemy.

RYE—Continued.

TABLE 12.—Rye: Area and production in undermentioned countries, 1916-1918—Continued.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
AUSTRALASIA						
Australia:	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Queensland	[1]	[1]		1,000	2,000	
New South Wales	3,000	2,000		32,000	31,000	
Victoria	3,000	3,000		43,000	43,000	
South Australia	3,000	2,000		31,000	11,000	
Western Australia	1,000	1,000		4,000	4,000	
Tasmania	1,000	1,000		17,000	7,000	
Total Australia	11,000	9,000		127,000	97,000	
Grand total						

[1] Less than 500 acres.

TABLE 13.—Rye: Total production of countries named in Table 12, 1895-1915.

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels.		Bushels.		Bushels.		Bushels.
1895	1,468,212,000	1901	1,416,022,000	1907	1,538,778,000	1913	1,880,387,000
1896	1,499,250,000	1902	1,647,845,000	1908	1,590,057,000	1914	1,596,882,000
1897	1,300,645,000	1903	1,659,961,000	1909	1,747,123,000	1915	1,577,490,000
1898	1,461,171,000	1904	1,742,112,000	1910	1,673,473,000		
1899	1,583,179,000	1905	1,495,751,000	1911	1,753,933,000		
1900	1,557,634,000	1906	1,433,395,000	1912	1,886,517,000		

TABLE 14.—Rye: Acreage (sown and harvested) production, and total farm value, by States, 1918.

(000 omitted.)

State.	Acreage.		Production.	Farm value Dec. 1.
	Sown in fall of 1917.	Harvested.		
	Acres.	Acres.	Bushels.	Dollars.
Vermont	1	1	21	37
Massachusetts	4	4	80	182
Connecticut	12	11	242	496
New York	140	112	1,848	3,173
New Jersey	75	73	1,350	2,336
Pennsylvania	265	250	4,250	7,012
Delaware	1	1	14	24
Maryland	31	30	450	765
Virginia	105	100	1,200	2,100
West Virginia	24	22	301	542
North Carolina	65	60	480	950
South Carolina	20	18	202	596
Georgia	21	20	176	370
Ohio	120	111	1,887	2,830
Indiana	415	410	6,765	10,283

RYE—Continued.

TABLE 14.—Rye: Acreage (sown and harvested) production, and total farm value, by States, 1918—Continued.

(000 omitted.)

State.	Acreage.		Production.	Farm value Dec. 1.
	Sown in fall of 1917.	Harvested.		
	Acres.	Acres.	Bushels.	Dollars.
Illinois	210	200	3,800	5,700
Michigan	480	472	6,750	10,125
Wisconsin	475	436	7,674	11,511
Minnesota	452	435	8,700	13,050
Iowa	63	54	1,026	1,508
Missouri	38	34	476	776
North Dakota	2,200	1,945	20,422	29,612
South Dakota	600	575	10,350	14.594
Nebraska	400	388	5,005	6,757
Kansas	175	170	2,431	4,133
Kentucky	65	65	884	1,423
Tennessee	30	30	300	576
Alabama	4	4	44	115
Texas	4	4	22	52
Oklahoma	10	8	88	165
Arkansas	2	2	21	44
Montana	25	20	240	346
Wyoming	30	25	450	684
Colorado	78	27	324	454
Utah	16	16	208	374
Idaho	4	4	60	99
Washington	7	7	70	140
Oregon	41	41	492	1,009
United States	6,708	6,185	89,103	134,947

FLAX.

TABLE 15.—Flax: Area and production in undermentioned countries, 1915-1917.

(000 omitted.)

Country.	Area.			Production.					
				Seed.			Fiber.		
	1915	1916	1917	1915	1916	1917	1915	1916	1917
NORTH AMERICA	Acres.	Acres.	Acres.	Bush.	Bush.	Bush.	Lbs.	Lbs.	Lbs.
United States	1,387	1,474	1,984	14,030	14,296	9,164	----------	----------	--------
Canada:									
Quebec	1	1	6	7,	5	47	----------	----------	--------
Ontario	5	4	4	62	42	52	----------	----------	--------
Manitoba	11	16	16	120	210	147	----------	----------	--------
Saskatchewan	395	542	754	5,255	6,692	4,710	----------	----------	--------
Alberta	48	95	140	670	1,311	979	----------	----------	--------
Total Canada	463	658	920	6,114	8,260	5.935	----------	----------	--------

FLAX—Continued.

TABLE 15.—Flax: Area and production in undermentioned countries, 1915-1917—Continued.

(000 omitted.)

Country.	Area.			Production.					
				Seed.			Fiber.		
	1915	1916	1917	1915	1916	1917	1915	1916	1917
	Acres.	Acres.	Acres.	Bush.	Bush.	Bush.	Lbs.	Lbs.	Lbs.
Mexico	(1)			110					
Total				20,254	22,556				
SOUTH AMERICA									
Argentina	4,258	4,001	3,207	45,040	39,289	3,996			
Uruguay	101	44	36	588	391	122			
Total	4,359			45,628	39,680	4,118			
EUROPE									
Austria-Hungary:									
Austria[2]	44			332			26,110		
Hungary proper	[3] 32			[3] 255			[3] 29,999		
Croatia-Slavonia	[3] 16			[3] 18			[3] 8,640		
Bosnia-Herzegovina	(1)			[3] 4			[3] 1,000		
Total, Austria-Hungary				609			65,749		
Belgium	[4] 32			[3] 387			[3] 39,437		
Bulgaria	[4] 2			[3] 8			[5] 308		
France[6]	20	15	20	161	146	134	11,061		8,909
Ireland	53	91	108				21,648	32,461	34,410
Italy	21	21	20	323	362	323	5,512	5,512	5,291
Netherlands	22	30	30	295	367	222	12,922		11,756
Roumania	14	20		134			1,187		
Russia:									
Russia proper	2,843	3,505		16,593					
Poland	[3] 88			[3] 878					
Northern Caucasia	48			499					
Total	2,979			17,970			815,438		
Serbia	[4] 4	(1)					[4] 2,095		
Spain	3	3	4			22	(1)	(1)	1,520
Sweden[7]	[5] 3	(1)		3	3		328	333	
Total									
ASIA									
British India[8]	3,325	3,334	3,564	15,880	19,040	21,040			
Japan			61						
Russia:									
Central Asia (4 governments of)	83			566					
Siberia (4 governments of)	152			796					
Transcaucasia (1 government of)	[3] 30			[3] 258					
Total	265			17,500					
AFRICA									
Algeria	[4] 1	(1)	1	[3] 15	(1)				
Grand total				103,287			975,685		

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[1] No official estimates.
[2] Galicia and Bukowina not included.
[3] Data for 1913.
[4] Data for 1914.
[5] Data for 1912.
[6] Excludes territory occupied by the enemy.
[7] Includes hemp.
[8] Includes certain native states.

FLAX—Continued.

TABLE 16.—Flax (seed and fiber): Total production of countries named in Table 15, 1896-1915.

Year.	Production.	
	Seed.	Fiber.
	Bushels.	Pounds.
1896	82,684,000	1,714,205,000
1897	57,596,000	1,498,054,000
1898	72,938,000	1,780,693,000
1899	66,348,000	1,138,763,000
1900	62,432,000	1,315,931,000
1901	72,314,000	1,050,260,000
1902	83,891,000	1,564,840,000
1903	110,455,000	1,492,383,000
1904	107,743,000	1,517,922,000
1905	100,458,000	1,494,229,000
1906	88,165,000	1,871,723,000
1907	102,960,000	2,042,390,000
1908	100,850,000	1,907,591,000
1909	100,820,000	1,384,524,000
1910	85,253,000	913,112,000
1911	101,339,000	1,011,350,000
1912	130,291,000	1,429,967,000
1913	132,477,000	1,384,757,000
1914	94,559,000	1,044,746,000
1915	103,287,000	975,685,000

TABLE 17.—Flaxseed: Acreage, production, and total farm value, by States, 1918.

State.	Acreage.	Average yield per acre.	Production.	Average farm price per bushel Dec. 1.	Farm value Dec. 1.
	Acres.	Bushels.	Bushels.	Dollars.	Dollars.
Minnesota	300,000	10.4	3,120,000	$ 3,41	$ 10,639,000
Iowa	13,000	11.0	143,000	3.20	458,000
Missouri	6,000	8.0	48,000	3.00	144,000
North Dakota	880,000	7.8	6,864,000	3.45	23,681,000
South Dakota	144,000	9.5	1,368,000	3.25	4,446,000
Nebraska	4,000	9.5	38,000	3.30	125,000
Kansas	41,000	5.0	205,000	3.30	676,000
Montana	547,000	5.2	2,844,000	3.38	9,613,000
Wyoming	3,000	9.0	27,000	3.25	88,000
United States	1,938,000	7.6	14,657,000	$ 3.40	$ 49,870,000

POTATOES

TABLE 18.—Potatoes: Area and production of undermentioned countries, 1915-1917.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
NORTH AMERICA	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
United States	3,734,000	3,565,000	4,374,000	359,721,000	286,953,000	438,618,000
Canada:						
Prince Edward Isl'd	31,000	31,000	35,000	3,558,000	6,386,000	6,125,000
Nova Scotia	34,000	34,000	41,000	4,759,000	6,935,000	7,173,000
New Brunswick	40,000	39,000	46,000	5,772,000	7,488,000	6,891,000
Quebec	117,000	112,000	227,000	17,510,000	14,672,000	18,158 000
Ontario	155,000	133,000	142,000	14,362,000	8,113,000	18,981,000
Manitoba	30,000	32,000	34,000	2,565,000	4,709,000	3,643,000
Saskatchewan	35,000	47,000	68,000	3,847,000	7,319,000	9,010,000
Alberta	28,000	29,000	49,000	4,024,000	4,783,000	7,409,000
British Columbia	16,000	15,000	15,000	3,956,000	2,892,000	2,502,000
Total Canada	486,000	473,000	657,000	60,353,000	63,297,000	79,892,000

POTATOES—Continued.

TABLE 18.—Potatoes: Area and production of undermentioned countries, 1915-1917—Continued.

Country.	Area.			Production.		
	1916	1917	1918	1916	1917	1918
	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Mexico	(1)			[2] 623,000		
Newfoundland		(1)		[3] 1,524,000	(1)	
Total				422,221,000		
SOUTH AMERICA						
Argentina	306,000	322,000		29,597,000	31,138,000	
Chile	78,000	79,000		9,546,000	11,598,000	
Total	384,000			39,143,000	42,736,000	
EUROPE						
Austria-Hungary:						
Austria[4]	1,757,000			232,203,000		
Hungary proper	1,577,000			209,356,000		
Croatia-Slavonia	[5] 194,000			[5] 21,140,000		
Bosnia-Herzegovina	[5] 67,000			[5] 2,998,000		
Total Austria-Hungary	3,595,000			465,697,000		
Belgium	[5] 395,000			[5] 117,613,000		
Bulgaria	[3] 8,000			[3] 503,000		
Denmark	160,000	159,000	143,000	42,349,000	26,629,000	31,882,000
Finland	[6] 181,000			[7] 18,736,000		
France	3,223,000	3,222,000	3,482,000	332,788,000	335,507,000	401,336,000
Germany	8,827,000			1,983,161,000	882,000,000	
Italy	725,000	729,000	732,000	56,768,000	54,277,000	48,112,000
Luxemburg	36,000	34,000	27,000	6,422,000	2,971,000	5,925,000
Malta	3,000	3,000		568,000	356,000	
Netherlands	438,000	413,000	419,000	126,741,000	88,490,000	89,858,000
Norway	113,000	114,000	145,000	19,957,000	31,310,000	42,584,000
Roumania[8]	28,000	35,000		3,765,000		
Do[9]	52,000			865,000		
Russia, European:						
Russia proper	6,815,000	5,879,000		770,709,000	662,169,000	
Poland	[5] 2,662,000			[5] 383,736,000		
Northern Caucasia	165,000			15,796,000		
Total European Russia	9,642,000			1,170,241,000		
Serbia	[3] 31,000			[3] 2,173,000		
Spain	[7] 688,000		839,000	[7] 76,657,000		113,477,000
Sweden	382,000	373,000	397,000	71,756,000	54,972,000	83,700,000
Switzerland	159,000	200,000	140,000	30,681,000	18,372,000	38,580,000
United Kingdom:						
England	437,000	400,000	473,000	100,881,000	88,484,000	117,351,000
Scotland	144,000	130,000	148,000	36,291,000	19,825,000	41,443,000
Wales	26,000	28,000	35,000	5,821,000	5,018,000	7,380,000
Ireland	594,000	586,000	709,000	138,509,000	90,845,000	155,036,000
Total United Kingdom	1,201,000	1,144,000	1,365,000	281,502,000	204,172,000	321,209,000
Total				4,808,943,000		
ASIA						
Japan	225,000	254,000	246,000	35,103,000	38,613,000	36,924,000

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[1] No official statistics.
[2] Data for 1907.
[3] Data for 1912.
[4] Galicia and Bukowina not included.
[5] Data for 1913.
[6] Data for 1910.
[7] Data for 1914.
[8] Grown alone.
[9] Grown with corn.

POTATOES—Continued.

TABLE 18.—Potatoes: Area and production of undermentioned countries, 1915-1917—Continued.

Country.	Area.			Production.		
	1915	1916	1917	1915	1916	1917
Russia, Asiatic:	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Central Asia (4 governments of)	106,000			7,974,000		
Siberia (4 governments of)	296,000			24,307,000		
Transcaucasia (1 government of)	2,000			100,000		
Total Asiatic Russia	404,000			32,381,000		
Total				67,484,000		
AFRICA						
Algeria	[1] 48,000		27,000	[1] 2,119,000		2,756,000
Union of South Africa	[2] 62,000			[2] 3,685,000		
Total				5,804,000		
AUSTRALASIA						
Australia:						
Queensland	8,000	6,000	9,000	598,000	278,000	726,000
New South Wales	30,000	20,000	22,000	1,520,000	1,658,000	1,691,000
Victoria	65,000	57,000	74,000	7,064,000	1,489,000	7,018,000
South Australia	8,000	4,000	5,000	673,000	485,000	759,000
Western Australia	5,000	5,000	6,000	550,000	527,000	629,000
Tasmania	32,000	29,000	34,000	2,946,000	2,983,000	2,503,000
Total Australia	148,000	121,000	150,000	13,351,000	12,421,000	13,326,000
New Zealand	22,000	30,000	26,000	4,952,000	4,809,000	4,992,000
Total Australasia	170,000	151,000	176,000	18,303,000	17,230,000	18,318,000
Grand total				5,361,898,000		

[1] Data for 1913.

[2] Census of 1911.

TABLE 19.—Potatoes: Total production of countries mentioned in Table 18, 1900-1915.

(000 omitted.)

Year.	Production.	Year.	Production.	Year.	Production.	Year.	Production.
	Bushels.		Bushels.		Bushels.		Bushels.
1900	4,382,031,000	1904	4,298,049,000	1908	5,295,043,000	1912	5,872,953,000
1901	4,669,958,000	1905	5,254,598,000	1909	5,595,567,000	1913	5,802,910,000
1902	4,674,000,000	1906	4,789,112,000	1910	5,242,278,000	1914	5,016,291,000
1903	4,409,793,000	1907	5,122,078,000	1911	4,842,109,000	1915	5,361,898,000

TABLE 20.—Potatoes: Acreage, production, and total farm value, by States, 1918.

State.	Acreage.	Production.	Farm value Dec. 1.	State.	Acreage.	Production.	Farm value Dec. 1.
	Acres.	Bushels.	Dollars.		Acres.	Bushels.	Dollars.
Maine	112	22,400	26,880	Connecticut	26	2,470	4,076
New Hampshire	21	2,940	4,263	New York	380	34,960	42,651
Vermont	26	3,380	4,664	New Jersey	92	8,464	14,389
Massachusetts	36	4,788	8,140	Pennsylvania	305	24,400	36,844
Rhode Island	5	650	1,124	Delaware	11	957	1,340

POTATOES—Continued.

TABLE 20.—Potatoes: Acreage, production, and total farm value, by States, 1918.—Continued.

(000 omitted.)

State.	Acreage.	Production.	Farm value Dec. 1.	State.	Acreage.	Production.	Farm value Dec. 1.
	Acres.	Bushels.	Dollars.		Acres.	Bushels.	Dollars.
Maryland	50	4,000	4,800	Tennessee	50	3,500	5,775
Virginia	125	11,750	14,100	Alabama	60	4,800	8,688
West Virginia	60	5,220	8,352	Mississippi	20	1,600	2,640
North Carolina	45	4,275	5,771	Louisiana	55	4,345	6,518
South Carolina	28	2,856	5,512	Texas	60	3,300	6,600
Georgia	23	1,610	2,978	Oklahoma	37	1,258	2,453
Florida	35	3,500	7,000	Arkansas	48	2,400	4,416
Ohio	160	11,040	16,560	Montana	52	7,020	5,616
Indiana	97	7,760	10,476	Wyoming	30	4,500	3,825
Illinois	160	11,520	17,050	Colorado	72	11,376	11,262
Michigan	340	28,560	25,418	New Mexico	10	1,000	1,600
Wisconsin	295	33,040	26,432	Arizona	5	425	871
Minnesota	312	32,760	24,570	Utah	20	3,600	3,492
Iowa	134	9,648	12,832	Nevada	9	1,539	1,893
Missouri	114	6,954	10,640	Idaho	29	5,220	4,228
North Dakota	90	8,910	6,504	Washington	65	8,580	8,666
South Dakota	90	8,190	7,617	Oregon	50	5,500	5,500
Nebraska	121	10,406	12,279	California	90	12,870	15,444
Kansas	80	4,240	6,106				
Kentucky	75	5,625	9,281	United States	4,210	400,106	478,136

HAY.

TABLE 21.—Hay: Acreage, production, and total farm value, by States, 1918.

(000 omitted.)

State.	Acreage.	Production.	Farm value Dec. 1.	State.	Acreage.	Production.	Farm value Dec. 1.
	Acres.	Tons.	Dollars.		Acres.	Tons.	Dollars.
Maine	1,196	1,375	19,112	North Dakota	522	574	8,380
New Hampshire	472	543	10,208	South Dakota	772	1,235	12,350
Vermont	993	1,291	21,043	Nebraska	1,701	2,381	40,953
Massachusetts	469	563	14,638	Kansas	1,869	3,227	62,604
Rhode Island	58	75	1,912	Kentucky	1,072	1,394	33,038
Connecticut	403	524	12,576	Tennessee	1,200	1,620	38,880
New York	4,300	5,375	109,650	Alabama	1,596	1,293	26,248
New Jersey	350	490	13,720	Mississippi	347	416	7,696
Pennsylvania	3,030	4,272	101,246	Louisiana	200	260	5,512
Delaware	80	100	2,800	Texas	581	581	14,467
Maryland	473	639	17,125	Oklahoma	564	677	13,202
Virginia	1,142	1,542	35,466	Arkansas	403	524	10,218
West Virginia	798	1,037	24,370	Montana	767	1,227	24,049
North Carolina	590	684	14,364	Wyoming	580	1,218	17,052
South Carolina	260	286	7,465	Colorado	951	2,045	31,698
Georgia	683	615	14,452	New Mexico	164	361	7,220
Florida	105	120	2,220	Arizona	150	480	11,520
Ohio	2,925	4,095	90,909	Utah	434	1,020	17,442
Indiana	2,210	3,204	63,439	Nevada	221	575	11,442
Illinois	3,372	4,552	95,592	Idaho	667	1,934	34,038
Michigan	2,598	2,676	62,886	Washington	794	1,429	36,297
Wisconsin	2,582	3,537	76,399	Oregon	815	1,467	29,340
Minnesota	1,850	2,590	36,519	California	2,376	2,970	59,400
Iowa	3,297	4,286	78,005				
Missouri	2,989	2,690	55,145	United States	55,971	76,069	1,524,307

CLOVER AND TIMOTHY SEED.

TABLE 22.—Clover seed: Acreage, production, and value, by States, 1918, and totals, 1916 and 1917.

State and Year.	Acreage.	Average yield per acre.	Production.	Average farm price per bushel Dec. 1.	Farm value Dec. 1.
	Acres.	Bushels.	Bushels.	Dollars.	Dollars.
New York	5,000	2.8	14,000	18.00	252,000
Pennsylvania	12,000	1.3	16,000	19.00	304,000
Ohio	126,000	1.1	139,000	20.50	2,850,000
Indiana	135,000	1.3	176,000	19.80	3,485,000
Illinois	175,000	1.7	298,000	19.00	5,662,000
Michigan	93,000	1.3	121,000	20.60	2,493,000
Wisconsin	56,000	1.8	101,000	20.80	2,101,000
Minnesota	16,000	1.1	18,000	18.00	324,000
Iowa	16,000	1.4	22,000	19.90	438,000
Missouri	29,000	1.3	38,000	17.20	654,000
Nebraska	4,000	1.6	6,000	17.00	102,000
Kansas	6,000	1.3	8,000	17.00	136,000
Kentucky	23,000	1.5	34,000	19.60	666,000
Tennessee	6,000	2.0	12,000	18.00	216,000
Idaho	13,000	6.0	78,000	20.50	1,599,000
Oregon	7,000	3.0	21,000	24.00	504,000
Total	722,000	1.5	1,102,000	19.77	21,786,000
1917	821,000	1.8	1,483,000	12.84	19,107,000
1916	939,000	1.8	1,706,000	9.18	15,661,000

APPLES.

TABLE 23.—Apples: Production and prices, Dec. 1, by States, 1917 and 1918.

State.	Apples.							
	Total crop (000 omitted.)		Commercial crop (000 omitted.)		Price Dec. 1.			
					Per bushel.		Per barrel.	
	1918	1917.	1918	1917	1918	1917	1918	1917
	Bu.	Bu.	Bbls.	Bbls.	Dolls.	Dolls.	Dolls.	Dolls.
Maine	2,287	4,617	225	400	0.95	0.95	2.80	2.75
New Hampshire	1,944	1,035	121	120	1.10	1.20	3.20	3.40
Vermont	1,002	1,286	114	135	1.40	1.30	4.10	4.00
Massachusetts	2,446	2,186	300	225	1.60	1.55	4.20	4.50
Rhode Island	201	198	12	11	1.55	1.50	4.60	3.75
Connecticut	1,184	1,316	120	100	1.55	1.44	3.90	4.00
New York	37,253	9,995	7,037	2,380	1.12	1.32	3.65	3.95
New Jersey	2,464	2,041	752	408	1.60	1.25	4.60	3.82
Pennsylvania	17,775	12,150	1,177	911	1.20	1.26	3.40	3.60
Delaware	500	450	184	186	1.25	1.10	4.50	3.40

APPLES—Continued.

TABLE 23.—Apples Production and prices, Dec. 1, by States, 1917 and 1918 —Continued.

State.	Apples.							
	Total crop (000 omitted.)		Commercial crop (000 omitted.)		Price Dec. 1.			
					Per bushel.		Per barrel.	
	1918	1917	1918	1917	1918	1917	1918	1917
	Bu.	Bu.	Bbls.	Bbls.	Dolls.	Dolls.	Dolls.	Dolls.
Maryland	2,365	2,525	330	256	1.10	.97	3.00	2.75
Virginia	9,000	9,970	1,766	1,650	1.24	1.01	3.95	3.30
West Virginia	8,174	5,994	1,145	702	1.17	1.22	3.55	3.68
North Carolina	5,460	6,156	184	200	1.30	1.14	4.20	3.40
South Carolina	600	800	--------	--------	2.05	1.55	5.70	4.65
Georgia	1,760	1,754	117	120	1.65	1.20	5.25	3.50
Ohio	8,316	6,336	954	532	1.53	1.50	4.64	4.30
Indiana	2,070	5,508	230	434	1.80	1.21	5.30	3.67
Illinois	3,213	7,519	754	1,554	1.85	1.10	6.00	3.50
Michigan	10,966	4,020	1,124	515	1.15	1.40	3.75	4.25
Wisconsin	2,061	2,436	105	124	1.55	1.34	4.80	4.25
Minnesota	792	1,188	33	50	2.09	1.55	6.11	4.50
Iowa	1,620	5,445	79	250	2.06	1.45	6.40	4.45
Missouri	4,245	7,818	600	1,128	1.64	1.06	5.10	3.08
South Dakota	109	246	3	5	2.35	1.70	6.80	4.50
Nebraska	459	618	59	225	2.30	1.40	7.00	4.55
Kansas	2,139	5,176	333	650	1.90	1.35	5.65	3.87
Kentucky	3,780	7,140	84	143	1.70	1.17	5.00	3.60
Tennessee	4,700	5,000	150	150	1.56	1.22	4.50	3.75
Alabama	1,551	1,452	26	24	1.70	1.40	6.00	4.25
Mississippi	488	315	--------	--------	1.30	1.45	5.10	5.00
Texas	198	429	11	23	1.60	1.56	4.50	4.55
Oklahoma	453	1,350	17	54	2.01	1.30	6.00	3.70
Arkansas	1,314	2,193	241	402	1.40	1.35	4.20	3.95
Montana	790	911	75	74	2.10	1.00	--------	--------
Colorado	1,845	2,640	527	701	1.70	.80	--------	--------
New Mexico	683	870	117	175	1.18	1.50	--------	--------
Arizona	152	135	15	16	2.40	2.05	--------	--------
Utah	780	906	163	184	1.40	.80	--------	--------
Nevada	175	102	--------	--------	1.60	1.60	--------	--------
Idaho	582	3,882	112	906	1.70	.95	--------	3.00
Washington	16,459	17,325	4,296	4,620	1.25	1.25	--------	--------
Oregon	3,500	3,723	671	713	1.10	1.05	--------	--------
California	5,577	5,871	1,127	1,174	1.30	1.15	--------	--------
United States	173,632	163,117	25,490	22,630	1.32	1.22	--------	--------

HORSES AND MULES.

TABLE 24.—Horses and mules: Number and value on farms Jan. 1, 1918 and 1919, by States.

State.	Horses.						Mules.					
	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—		Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—	
	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918
Maine	107	108	$154.00	$163.00	16,478	17,604	-----	-----	-------	-------	-------	------
New Hampshire	42	43	145,00	151.00	6,090	6,493	-----	-----	-------	-------	-------	-------
Vermont	88	88	139.00	144.00	12,232	12,672	-----	-----	-------	-------	-------	-------
Massachusetts	54	57	157.00	163.00	8,478	9,291	-----	-----	-------	-------	-------	-------
Rhode Island	8	8	159.00	155.00	1,272	1,240	-----	-----	-------	-------	-------	-------
Connecticut	44	45	164.00	161.00	7,216	7,245	-----	-----	-------	-------	-------	-------
New York	578	590	139.00	145.00	80,342	85,550	6	6	$139.00	$159.00	834	954
New Jersey	89	90	143.00	153.00	12,727	13,770	4	4	167.00	174.00	668	696
Pennsylvania	578	590	124.00	126.00	71,672	74,340	48	48	129.00	138.00	6,192	6,624
Delaware	35	36	92.00	87.00	3,220	3,132	6	6	122.00	115.00	732	690
Maryland	171	171	104.00	102.00	17,784	17,442	25	25	133.00	124.00	3,325	3,100
Virginia	369	365	109.00	104.00	40,221	37,960	66	65	138.00	128.00	9,108	8,320
West Virginia	194	196	101.00	106.00	19,594	20,776	12	12	115.00	116 00	1,380	1,392
North Carolina	181	187	146.00	140.00	26,426	26,180	208	210	176.00	167.00	36,608	35,070
South Carolina	82	80	180.00	156.00	14,760	12,480	194	185	206.00	192.00	39,964	35,520
Georgia	131	130	156.00	145.00	20,436	18,850	344	334	200.00	181.00	68,800	60,454
Florida	62	62	129.00	127.00	7,998	7,874	35	34	177.00	172.00	6,195	5,848
Ohio	891	900	107.00	112.00	95,337	100,800	28	27	117.00	118.00	3.276	3,186
Indiana	829	837	103.00	105.00	85,387	87,885	94	95	125.00	119.00	11,750	11,305
Illinois	1,467	1,467	100.00	103.00	146,700	151,101	147	150	125.00	120.00	18,375	18,000
Michigan	666	673	105.00	118.00	69,930	79,414	4	4	106.00	119.00	424	476
Wisconsin	694	708	109.00	117.00	75,646	82,836	3	3	111.00	117.00	333	351
Minnesota	950	950	98.00	105.00	93,100	99,750	6	6	110.00	111.00	660	666
Iowa	1,567	1,583	95.00	104.00	148,865	164,632	68	69	113 00	116.00	7,684	8,004
Missouri	1,040	1,040	92.00	97.00	95,680	100,880	374	367	116.00	113.00	43,384	41,471
North Dakota	850	842	93.00	102.00	79,050	85,884	9	9	107.00	121.00	963	1,089
South Dakota	827	811	80.00	95.00	66,160	77,045	16	16	99 00	109 00	1,584	1,744
Nebraska	1,049	1,049	87.00	101.00	91,263	105,949	109	118	109.00	113 00	11,881	13.334
Kansas	1,153	1,142	94.00	104.00	108,382	118,768	260	280	114.00	118.00	29,640	33,040
Kentucky	439	443	104.00	101.00	45,656	44,743	231	224	127.00	122.00	29,337	27,328
Tennessee	357	350	116.00	109.00	41,412	38,150	278	273	140.00	131.00	38,920	35.763
Alabama	155	153	128.00	116.00	19,840	17,748	304	289	157.00	141.00	47.728	40,749
Mississippi	256	253	113.00	100.00	28,928	25,300	316	307	139.00	124.00	43,924	38,068
Louisiana	213	207	97.00	93.00	20.661	19,251	164	156	145 00	135 00	23,780	21,060
Texas	1,164	1,212	78.00	77.00	90,792	93,324	792	808	115.00	107.00	91,080	86,456
Oklahoma	744	737	83.00	94.00	61,752	69,278	288	280	110.00	114.00	31,680	31,920
Arkansas	267	272	93.00	97.00	24,831	26,384	315	292	123.00	125.00	38,745	36,500
Montana	557	506	84.00	98.00	46,788	49,588	5	5	99.00	105.00	495	525
Wyoming	230	215	77.00	82.00	17,710	17,630	4	4	106.00	104.00	424	416
Colorado	419	399	91.00	97.00	38,129	38,703	31	30	107.00	108.00	3,317	3,240
New Mexico	261	272	62.00	62.00	16,182	16,864	20	19	92.00	89.00	1,840	1,691
Arizona	136	135	71.00	71.00	9,656	9,585	9	9	112.00	108.00	1,008	972
Utah	148	145	83.00	89.00	12,284	12,905	2	2	78.00	82.00	156	164
Nevada	75	75	62.00	77.00	4,650	5,775	3	3	72.00	80.00	216	240
Idaho	276	265	89.00	99.00	24,564	26,235	4	4	98.00	105.00	392	420
Washington	303	300	92.00	108.00	27,876	32,400	20	19	108 00	117.00	2,160	2,223
Oregon	303	300	89.00	98.00	26,967	29,400	10	10	93.00	102.00	930	1.020
California	435	468	91.00	98.00	39,585	45,864	63	66	125.00	115 00	7,875	7,590
United States	21,534	21,555	98.48	104.24	2,120,709	2,246,970	4,925	4,873	135.59	128.81	667,767	627,679

CATTLE.

TABLE 25.—Cattle: Number and value on farms, Jan. 1, 1918 and 1919, by States.

State.	Milch Cows.						Other Cattle.					
	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—		Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—	
	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918
Maine	175	170	$70.50	$75.00	12,338	12,750	142	127	$36.10	$37.60	5,126	4,775
New Hamp'ire	107	102	80.00	85.00	8,560	8,670	74	70	39.80	40.00	2,945	2,880
Vermont	281	290	72.00	76.00	20,232	22,040	194	185	31.20	33.40	6,053	6,179
Massachusetts	165	162	94.00	90.00	15,510	14,580	100	93	36.30	37.30	3,630	3,469
Rhode Island	20	21	101.00	90.00	2,020	1,890	13	12	40.10	39.70	521	476
Connecticut	114	116	94.00	85.00	10,716	9,860	75	76	41.90	41.00	3,142	3,116
New York	1,478	1,508	89.00	85.00	131,542	128,180	911	930	41.00	38.30	37,351	35,619
New Jersey	150	150	100.00	90.00	15,000	13,500	74	70	51.30	41.60	3,796	2,912
Pennsylvania	979	960	85.00	75.00	83,215	72,000	731	717	40.70	36.80	29,752	26,386
Delaware	46	43	76.00	64.00	3,496	2,752	23	23	42.80	35.80	984	823
Maryland	177	181	80.00	69.50	14,160	12,580	135	134	45.60	38.90	6,156	5,213
Virginia	424	400	69.00	57.00	29,256	22,800	567	530	46.40	37.70	26,309	19,981
West Virginia	243	245	71.00	61.50	17,253	15,068	366	373	50.30	44.80	18,410	16,710
North Carolina	315	309	69.00	51.00	21,735	15,759	379	375	31.90	24.80	12,090	9,300
South Carolina	203	193	78.00	57.50	15,834	11,098	244	232	34.40	25.60	8,394	5,939
Georgia	452	435	65.00	51.80	29,380	22,533	763	727	27.30	22.20	20,830	16,139
Florida	149	145	61.00	53.00	9,089	7,685	936	891	24.80	22.20	23,213	19,780
Ohio	1,030	1,000	83.50	74.00	86,005	74,000	1,102	1,080	47.30	43.70	52,125	47,196
Indiana	713	713	85.00	70.00	60,605	49,910	780	757	52.40	45.00	40,872	34,065
Illinois	1,060	1,050	90.00	80.50	95,400	84,525	1,367	1,314	54.00	49.70	73,818	65,306
Michigan	848	865	83.00	74.00	70,384	64,010	729	752	38.90	35.90	28,358	26,997
Wisconsin	1,803	1,785	82.00	75.00	147,846	133,875	1,436	1,394	37.00	33.30	53,132	46,420
Minnesota	1,368	1,328	78.00	70.00	106,704	92,960	1,632	1,600	33.50	31.40	54,672	50,240
Iowa	1,381	1,405	86.00	76.70	118,766	107,764	2,861	2,919	52.60	47.90	150,489	139,820
Missouri	919	910	74.00	69.70	68,006	63,427	1,782	1,782	49.40	47.60	88,031	84,823
North Dakota	429	425	80.00	69.00	34,320	29,325	612	630	47.60	41.60	29,131	26,208
South Dakota	561	555	82.00	75.00	46,002	41,625	1,496	1,438	53.90	49.80	80,634	71,612
Nebraska	662	676	85.00	78.50	56,270	53,066	2,940	2,940	49.90	49.30	146,706	144,942
Kansas	964	945	81.00	75.40	78.084	71,253	2,401	2,354	52.70	49.30	126,533	116,052
Kentucky	444	435	72.00	61.00	31,968	26,535	599	581	42.50	39.00	25,458	22,659
Tennessee	380	373	66.00	55.00	25,080	20,515	587	554	34.30	30.10	20,134	16,675
Alabama	494	454	58.00	47.50	28,652	21,565	851	760	24.30	20.40	20,679	15,504
Mississippi	549	508	60.00	47.50	32,940	24,130	708	644	26.70	21.90	18,904	14,104
Louisiana	363	330	58.00	49.50	21,054	16,335	690	600	26.80	24.20	18,492	14.520
Texas	1,060	1,128	63.00	57.50	66,780	64,860	3,961	4,660	36.80	34.40	145,765	160,304
Oklahoma	561	567	68.00	67.70	38,148	38,386	1,444	1,430	44.20	43.90	63.825	62.777
Arkansas	443	430	59.00	56.00	26,137	24,080	678	640	24.70	24.90	16,747	15,936
Montana	197	179	87.00	83.50	17.139	14,946	1,020	1,020	58.90	56.10	60,078	57,222
Wyoming	72	65	95.00	88.00	6,840	5,720	1,000	910	61.80	59.10	61,800	53,781
Colorado	264	254	88.00	82.00	23.232	20,828	1,361	1,272	54.40	50.20	74,038	63,854
New Mexico	84	88	75.00	72.00	6,300	6,336	1,325	1,250	42.90	41.90	56,842	52,375
Arizona	72	85	90.00	85.00	6,480	7,225	1,100	1,100	43.40	40.50	47,740	44,550
Utah	101	96	82.00	73.50	8,282	7,056	480	457	48.10	43.90	23,088	20,062
Nevada	29	28	94.00	85.00	2,726	2,380	533	517	47.00	46.30	25,051	23,937
Idaho	139	139	82.00	73.00	11,398	10,147	537	488	48.90	44.70	26,259	21,814
Washington	216	240	75.00	70.00	16,200	16,800	307	320	37.60	36.00	11,543	11,520
Oregon	222	227	66.00	60.00	14,652	13,620	703	683	44.80	39.50	31,494	26,978
California	561	597	79.00	72.50	44,319	43,282	1,650	1,701	48.20	42.10	79,530	71,612
United States	23,467	23,310	78.24	70.54	1,836,055	1,644,231	44,399	44,112	44.16	40.88	1,960,670	1,803,482

SHEEP AND WOOL.

TABLE 26.—Sheep: Number and value on farms, Jan. 1, 1918 and 1919, by States.

State.	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—	
	1919	1918	1919	1918	1919	1918
Maine	173	163	$ 11.10	$ 9.40	1,920	1,532
New Hampshire	39	37	12.00	10.60	468	392
Vermont	107	104	12.70	11.60	1,359	1,206
Massachusetts	28	26	12.50	10.30	350	268
Rhode Island	7	6	12.50	9.50	88	57
Connecticut	24	20	13.30	11.40	319	228
New York	840	800	13.90	13.20	11,676	10,560
New Jersey	29	28	13.20	10.90	383	305
Pennsylvania	959	913	11.70	11.70	11,220	10,682
Delaware	10	10	10.30	9.00	103	90
Maryland	246	234	11.30	9.80	2,780	2,293
Virginia	713	692	12.50	10.50	8,912	7,266
West Virginia	789	751	11.70	11.20	9,231	8,411
North Carolina	138	137	8.70	6.60	1,201	904
South Carolina	29	30	6.50	4.60	188	138
Georgia	144	144	5.80	4.20	835	605
Florida	120	120	4.10	3.40	492	408
Ohio	2,980	2,950	11.00	11.60	32,780	34,220
Indiana	1,098	998	13.90	12.80	15,262	12,774
Illinois	1,028	952	14.20	12.90	14,598	12,281
Michigan	2,119	1,926	12.50	12.60	26,488	24,268
Wisconsin	716	651	12.40	11.90	8,878	7,747
Minnesota	642	568	13.20	11.80	8,474	6,702
Iowa	1,322	1,224	13.70	13.80	18,111	16,891
Missouri	1,539	1,466	13.20	12.90	20,315	18,911
North Dakota	265	252	12.60	11.80	3,339	2,974
South Dakota	810	750	12.20	11.60	9,882	8,700
Nebraska	367	408	11.90	11.00	4,367	4,488
Kansas	460	418	12.80	12.00	5,888	5,016
Kentucky	1,274	1,213	13.10	11.20	16,689	13,586
Tennessee	567	550	11.80	8.60	6,691	4,730
Alabama	140	131	6.40	4.50	896	590
Mississippi	183	174	6.60	4.50	1,208	783
Louisiana	230	209	5.20	4.10	1,196	857
Texas	2,232	2,188	9.40	7.50	20,981	16,410
Oklahoma	125	114	11.80	11.30	1,475	1,288
Arkansas	147	134	8.20	7.10	1,205	951
Montana	2,984	3,045	11.80	12.60	35,211	38,367
Wyoming	4,018	4,100	12.30	13.60	49,421	55,760
Colorado	2,303	2,350	10.90	12.60	25,103	29,610
New Mexico	3,135	3,135	8.50	10.00	26,648	31,350
Arizona	1,400	1,550	10.00	10.40	14,000	16,120
Utah	2,410	2,340	11.00	13.60	26,510	31,824
Nevada	1,520	1,505	11.80	13.90	17,936	20,920
Idaho	3,234	3,202	12.20	13.30	39,455	42,587
Washington	780	661	11.80	11.40	9,204	7,535
Oregon	2,497	2,448	12.00	12.10	29,964	29,621
California	2,943	2,776	12.00	11.30	35,316	31,369
United States	49,863	48,603	11.61	11.82	579,016	574,575

SHEEP AND WOOL—Continued.

TABLE 27.—Wool: Estimated production, 1917 and 1918.

State.	Production (000 omitted).		Weight per fleece.		Number of fleeces (000 omitted).	
	1918	1917	1918	1917	1918	1917
	Pounds.	Pounds.	Pounds.	Pounds.	Number.	Number.
Maine	883	833	6.7	6.6	132	126
New Hampshire	192	193	7.0	6.7	27	27
Vermont	663	597	7.2	7.3	92	82
Massachusetts	119	119	6.0	6.5	20	18
Rhode Island	24	24	6.0	6.2	4	4
Connecticut	76	75	5.5	5.5	14	14
New York	3,830	3,514	7.0	6.8	547	517
New Jersey	88	80	5.5	5.2	16	15
Pennsylvania	4,774	4,225	6.7	6.5	713	650
Delaware	31	31	5.7	5.8	5	5
Maryland	773	758	5.8	6.0	133	126
Virginia	1,918	1,862	4.7	4.6	408	405
West Virginia	2,830	2,695	5.2	5.0	544	539
North Carolina	570	553	4.0	3.8	142	146
South Carolina	103	95	4.0	4.0	26	24
Georgia	478	455	3.9	2.9	165	157
Florida	426	355	3.2	2.8	133	127
Ohio	12,600	12,000	7.3	7.4	1,726	1,622
Indiana	4,765	4,332	7.1	7.0	671	619
Illinois	4,048	3,855	8.0	7.9	506	488
Michigan	8,765	8,192	7.4	7.4	1,184	1,107
Wisconsin	2,850	2,500	7.6	7.9	375	316
Minnesota	3,112	2,964	7.4	7.8	421	380
Iowa	4,815	4,500	7.5	7.7	642	584
Missouri	5,532	4,810	7.0	7.0	790	687
North Dakota	1,560	1,418	7.6	7.4	205	192
South Dakota	4,747	3,738	7.4	7.3	641	512
Nebraska	1,696	1,600	7.8	7.5	217	213
Kansas	1,624	1,450	7.6	7.6	214	191
Kentucky	3,058	2,969	4.9	4.8	624	619
Tennessee	1,954	1,776	4.6	4.2	425	423
Alabama	368	350	3.5	3.3	105	106
Mississippi	619	491	4.0	3.3	155	149
Louisiana	594	560	3.7	3.6	161	156
Texas	11,250	10,045	7.0	7.0	1,607	1,435
Oklahoma	518	450	6.8	6.5	76	69
Arkansas	402	350	4.9	4.5	82	78
Montana	23,342	23,342	8.2	7.6	2,847	3,071
Wyoming	34,026	30,380	8.4	8.2	4,051	3,705
Colorado	9,261	8,820	6.2	6.4	1,494	1,378
New Mexico	17,132	18,422	5.6	5.8	3,059	3,176
Arizona	5,656	5,831	6.1	6.5	927	897
Utah	15,800	14,800	7.7	7.6	2,052	1,947
Nevada	10,000	9,000	7.0	7.3	1,429	1,233
Idaho	19,500	17,500	7.9	7.6	2,468	2,303
Washington	5,504	4,813	8.6	8.4	640	573
Oregon	12,500	12,000	8.0	8.2	1,562	1,463
California	12,545	12,180	7.0	7.0	1,792	1,740
United States	257,921	241,892	7.0	7.0	36,269	34,414
Pulled wool	42,000	40,000				

SWINE.

TABLE 28.—Swine: Number and value on farms Jan. 1, 1918 and 1919, by States.

State.	Number (thousands) Jan. 1—		Average price per head Jan. 1—		Farm value (thousands of dollars) Jan. 1—	
	1919	1918	1919	1918	1919	1918
Maine	110	100	$24.00	$ 23.00	2,640	2,300
New Hampshire	66	56	25.00	25.00	1,650	1,400
Vermont	125	118	23.00	22.20	2,875	2,620
Massachusetts	147	113	26.00	23.00	3,822	2,599
Rhode Island	14	16	28.00	25.00	392	400
Connecticut	83	64	27.00	26.00	2,241	1,664
New York	814	775	26.00	23.60	21,164	18,290
New Jersey	209	174	30.30	26.20	6,333	4,559
Pennsylvania	1,420	1,291	26.00	22.30	36,920	28,789
Delaware	71	64	19.50	17.00	1,384	1,088
Maryland	434	388	21.00	16.00	9,114	6,208
Virginia	1,134	1,042	18.00	13.90	20,412	14,484
West Virginia	439	422	18.50	16.00	8,122	6,752
North Carolina	1,546	1,400	21.00	17.10	32,466	23.940
South Carolina	1,056	960	21.00	15.50	22,176	14,880
Georgia	3,043	2,766	17.50	14.50	53,252	40,107
Florida	1,512	1,375	13.00	10.60	19,656	14,575
Ohio	4,266	3,878	21.80	20.50	92,999	79,499
Indiana	4,668	4,168	23.30	20.20	108,764	84,194
Illinois	5,724	5,111	25.00	22.00	143,100	112,442
Michigan	1,355	1,278	23.60	19.80	31,978	25,304
Wisconsin	2,181	2,019	26.50	22.30	57,796	45,024
Minnesota	2,784	2,400	28.50	23.50	79,344	56,400
Iowa	10,925	10,307	27.50	24.20	300,438	249,429
Missouri	4,943	4,494	18.50	18.50	91,446	83,139
North Dakota	456	507	24.70	20.80	11,263	10,546
South Dakota	1,654	1,504	27.50	23.50	45,485	35,344
Nebraska	4,250	4,250	26.50	24.40	112,625	103,700
Kansas	2,381	2,560	21.50	21.00	51,192	53,760
Kentucky	1,768	1,637	16.00	14.50	28,288	23,736
Tennessee	1,965	1,634	16.50	15.00	32,422	24,510
Alabama	2,223	2,128	17.00	14.50	37,791	30,856
Mississippi	2,282	1,902	16.00	15.00	36,512	28,530
Louisiana	1,599	1,568	15.20	13.60	24,305	21,325
Texas	2,320	2,900	17.00	14.10	39,440	40,890
Oklahoma	1,036	1,219	16.70	17.00	17,301	20,723
Arkansas	1,725	1,643	13.00	13.50	22,425	22,180
Montana	200	215	22.00	20.50	4,400	4,408
Wyoming	63	55	21.50	20.50	1,354	1,128
Colorado	406	387	22.00	20.00	8,932	7,740
New Mexico	93	86	19.00	15.70	1,767	1,350
Arizona	58	64	18.00	18.00	1,044	1,152
Utah	123	102	20.20	20.00	2,485	2,040
Nevada	40	37	18.00	19.00	720	703
Idaho	208	219	19.60	19.00	4,077	4,161
Washington	317	283	22.00	20.00	6,974	5,660
Oregon	348	325	19.10	17.50	6,647	5,688
California	1,003	974	18.00	17.50	18,054	17,045
United States	75,587	70,978	22.04	19.54	1,665,987	1,387,261

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